



CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

ANNUAL REPORT

OF THE


MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1923.



Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

<https://archive.org/details/b29904869>

CONTENTS.

	PAGE
INTRODUCTION AND SUMMARY—	
HEALTH COMMITTEE	7
MATERNITY AND CHILD WELFARE COMMITTEE.....	8
ORGANISATION OF HEALTH DEPARTMENT.....	9
STAFF	10
LETTER TO CHAIRMAN OF HEALTH COMMITTEE	11-48
Unemployment, Cost of Living, etc.	11
Population, Marriages, Birth Rate, Death Rate, etc.	12
Climatology.....	12
Diseases of Circulatory, Respiratory, Nervous and Digestive Systems	13
Cancer	14
Diabetes	15
Epidemic and Infectious Diseases	16
Hospitals for Infectious Diseases	19
Bacteriological Work	20
Venereal Disease	21
Ophthalmia Neonatorum	22
Police Women	22
Maternity and Child Welfare—	
Infantile Mortality	22
Maternal Mortality	24
Centres	24
Dried Milk	25
Princess Mary Maternity Hospital	26
Hostel for Unmarried Mothers.....	26
Day Nurseries	26
Midwives	27
Tuberculosis—	
Mortality	27
Dispensary	29
Stannington Sanatorium	31
Barrasford Sanatorium	31
Open Air Schools.....	33
Voluntary Tuberculosis Care Council	33
Surgical Tuberculosis.....	33
Food and Provisions—	
Bovine Tuberculosis and Milk	34
Cowsheds, etc.	35
Slaughter Houses	36
Cattle Market	36
Inspection of Meat, etc.	37
Food and Drugs Adulteration Acts, etc.	37
Milk Pollution.....	38
Grade “ A ” (Certified) Milk, etc.....	39
Milk Shops	40
Ice Cream	40
Preservatives in Food	41
Premises on which Food is Prepared	41
Water	42

CONTENTS--*Continued.*

	PAGE
The House and the Workplace—	
Nuisance Abatement	42
Atmospheric Pollution	43
Housing	44
Unheathy Areas	45
Common Lodging Houses	46
Factories and Workshops, Theatres, Cinemas, etc.	47
Staff—Retirement of Mr. W. Hudspeth	47
Resignation of Dr. S. J. Clegg	47
Death of Inspector R. T. Morrison	48
REPORT—	
I.—GENERAL—	
(INCLUDING POPULATION AND VITAL STATISTICS, MORTALITY TABLES AS PRESCRIBED BY MINISTRY OF HEALTH, SOCIAL CONDITIONS, GEOLOGY, CLIMATOLOGY, WATER SUPPLY, AND DISPOSAL OF REFUSE, ADOPTIVE AND LOCAL ACTS IN FORCE)	49-58A
II.—THE CHILD—	
Births and Deaths	61-62B
Report of the Maternity and Child Welfare Medical Officer—	
General	63
Births and Infantile Deaths	65
Welfare Centres	66, 72-75
Ante-Natal Clinics	68
Sewing and Knitting Classes	69
Voluntary Workers	69
New Maternity Hospital	69
Lectures	70
Dried Milk	70
Notification of Births, Still Births, etc.	76
Syphilis	77
Work of the Health Visitors—Details, etc.	77
Midwives Acts	80
Ophthalmia Neonatorum	83
Puerperal Septicæmia	83
Deaths in Puerperal Period	84
III.—INFECTIOUS DISEASE—	
Infectious Disease, Attack Rate in principal towns, etc.	87
Deaths and Notifications, and Ward Distribution	88
Ward Incidence of Infectious Disease	90
Households affected with Infectious Disease	91
Schools and Infectious Disease	91
Public Institutions and Infectious Disease	91
Milk Supply and Infectious Disease	92
Business Premises and Infectious Disease	92
Scarlet Fever	92
Diphtheria and Antitoxin	93
Measles and Rubella	93
Whooping Cough	96
Enteric Fever	97
Diarrhœa	97
Food Poisoning	97

CONTENTS—*Continued.*

PAGE

III.—INFECTIOUS DISEASE (*Continued.*)—

Typhus	98
Smallpox and Vaccination	98
Public Vaccinators	99
Erysipelas	99
Puerperal Septicæmia	99
Influenza and Pneumonia.....	99
Venereal Diseases.....	102
Acute Poliomyelitis, Epidemic Cerebro-Spinal Meningitis, etc.	103
City Hospitals for Infectious Diseases—	
Accommodation, Admissions, Percentages, and present	
Death Rates compared with previous years	104
Diphtheria.....	107
Mixed Infections	108
Cross Infection and Return Cases	109
Hospital and Home “ Isolation ” compared	110
Otorrhœa and Rhinorrhœa	112
Average Stay in Hospital	115
Staff Sickness	115
Bacteriological Laboratory, City Hospital.....	115
Smallpox and Isolation Hospitals	116
Disinfection, Replacement of Articles Destroyed and Dis-	
infectants Distributed	116
Bacteriological Investigations.....	117

IV.—TUBERCULOSIS—

Report of Tuberculosis Medical Officer—

Introduction	123
Notifications	127
Deaths—Sex and Age Periods	130
Duration of Illness.....	132
Occupation of Sufferers.....	134
Family History	134
Housing and Tuberculosis	134
Ward Distribution	135
Work of Tuberculosis Dispensary	137
Bacteriological Examination of Sputum	138
Work of Nurses and Inspector	141
Institutional Treatment—Barrasford, Stannington,	
Walker Gate.....	142
Summary of Work Accomplished	149
Barrasford Sanatorium—Report of the Medical Superintendent	150

V.—FOOD.

BOVINE TUBERCULOSIS, AND THE INSPECTION OF MEAT AND
PROVISIONS AND FOOD AND DRUGS—

Tuberculous Milk	169
Report of the Veterinary Officer, Inspector of Meat, etc.—	
Diseases of Animals Acts, 1894-1914	171
Dairies, Cowsheds, and Milk Shop Orders	171
Bovine Tuberculosis.....	171
Rabies	173
Cattle Market—Animals Exhibited	173
Animals Slaughtered	173

CONTENTS—*Continued.*

	PAGE
V.—FOOD (<i>Continued</i>)—	
Report of the Veterinary Officer, Inspector of Meat, etc.— <i>Con.</i>	
Live Stock and Meat Supplies	174
Meat, Provisions, etc., Inspection of	176
Imported Foodstuffs	177
Carcasses, etc., Destroyed as being unfit for human consumption	179
Poultry, Game, Fish, etc., Destroyed do. do. do.	181
Slaughter Houses	182
Food and Drugs Adulteration (Senior Sanitary Inspector)	183, 185A
Bacterial Impurity of Milk and Water	185
Condition of Premises on which food is Prepared	186
VI.—THE HOME AND THE WORKSHOP—	
NUISANCES, HOUSING, FACTORIES AND WORKSHOPS, ETC.	
Report of Senior Sanitary Inspector.	
Rearrangement of Districts	191
Nuisance Abatement	192
Overcrowding	192
Increase of Rent and Mortgage (Restriction) Acts	194
Magisterial Proceedings	194
Removal of Privies, etc.	195
Return of Dry Closets	196
Atmospheric Pollution (Smoke Nuisances, etc.)	196
Sanitary Inspection of Theatres, etc.	198
Offensive Trades	198
Notices in respect of Nuisances	200
Visits and Inspections in respect of Nuisances	201
Summary of Legal Proceedings	202
Housing—	
Census of Unoccupied Houses	204
Effect of Bad Housing	204
Housing and Town Planning Acts, etc.	206
Ministry of Health Table	207
Unhealthy Areas	208
Houses dealt with under the Newcastle-upon-Tyne Im- provement Act, 1882	208
Houses Demolished	208
Houses built during the year	208
Tenemented Houses	208
Customs and Inland Revenue Act, 1890, Sec. 26 (2)	209
New Buildings and Sanitary Alterations—Plans	209
Common Lodging Houses	209
Factories and Workshops—	211
Inspections	212
Defects found and dealt with	212
Home Work	213
Registered Workshops, etc.	214
Trades carried on in Workshops of City	214
Council and other Schools	216
Rag Flock Act	216
Quarry (Fencing) Act, 1887	217

Members of Council who served on the

HEALTH COMMITTEE.

Councillor R. W. SIMPSON, M.B., Ch.B., Chairman.

Councillor DAVID ADAMS, J.P., Vice-Chairman.

The Lord Mayor (Alderman WILLIAM BRAMBLE, D.L., J.P.)

Alderman ADAM WILSON, J.P., F.R.C.S.

„ RICHARD MAYNE, J.P.

„ ALEX. WILKIE, C.H., J.P.

„ JOHN PROCTOR, J.P.

„ THOMAS CRUDDIS, J.P.

Councillor WALTER LEE, J.P.

Councillor W. R. WALLACE.

„ G. D. NEWTON, L.R.C.P.

„ W. V. LONGFIELD.

„ W. H. WOODMAN.

„ JOHN E. SCANLAN, J.P.

„ R. J. THOMPSON, J.P.

„ JAMES BARTLETT.

„ J. C. DOYLE.

„ JOHN BARKER.

„ WALTER THOMPSON.

„ JAMES SMITH.

„ CATHERINE AULD.

„ JOHN CHAPMAN, J.P.

„ JAMES CAREY.

„ WM. BARKER ELLIS, J.P.

„ H. BENSON, J.P.

„ EDWARD MIDDLETON.

„ W. C. PERCIVAL.

„ GEO. DIXON.

MATERNITY AND CHILD WELFARE COMMITTEE.

*Councillor John Chapman, J.P., Chairman.

†Mrs. H. BRACKENBURY, Vice-Chairman.

*Alderman ADAM WILSON, J.P., F.R.C.S.

‡Councillor W. A. ALLAN.

*Councillor DAVID ADAMS, J.P.

* „ WALTER LEE, J.P.

* „ JAMES SMITH.

* „ G. D. NEWTON, L.R.C.P.

* „ W. BARKER ELLIS, J.P.

* „ W. H. WOODMAN.

* „ EDWARD MIDDLETON.

* „ R. W. SIMPSON, M.B., Ch.B.

‡ „ MARY LAVERICK.

* „ J. C. DOYLE.

†Miss M. M. BUCHANAN, J.P.

‡ „ E. C. DOUGHERTY.

†Mrs. J. L. GIBBIN, J.P.

* „ WALTER THOMPSON.

†Mrs. H. LOUIS.

‡ „ R. S. STEWART, M.P.

†Dr. R. P. R. LYLE.

* „ CATHERINE AULD.

†Mrs. J. T. PLATT.

* „ JAMES CAREY.

†Miss G. ROWELL.

‡ „ ANTHONY OATES.

†Dr. H. L. RUTTER.

‡ „ CHARLES PILLAR.

†Mr. GLADSTONE WALKER.

* „ JAMES BARTLETT.

†Mrs. A. J. SHORTT.

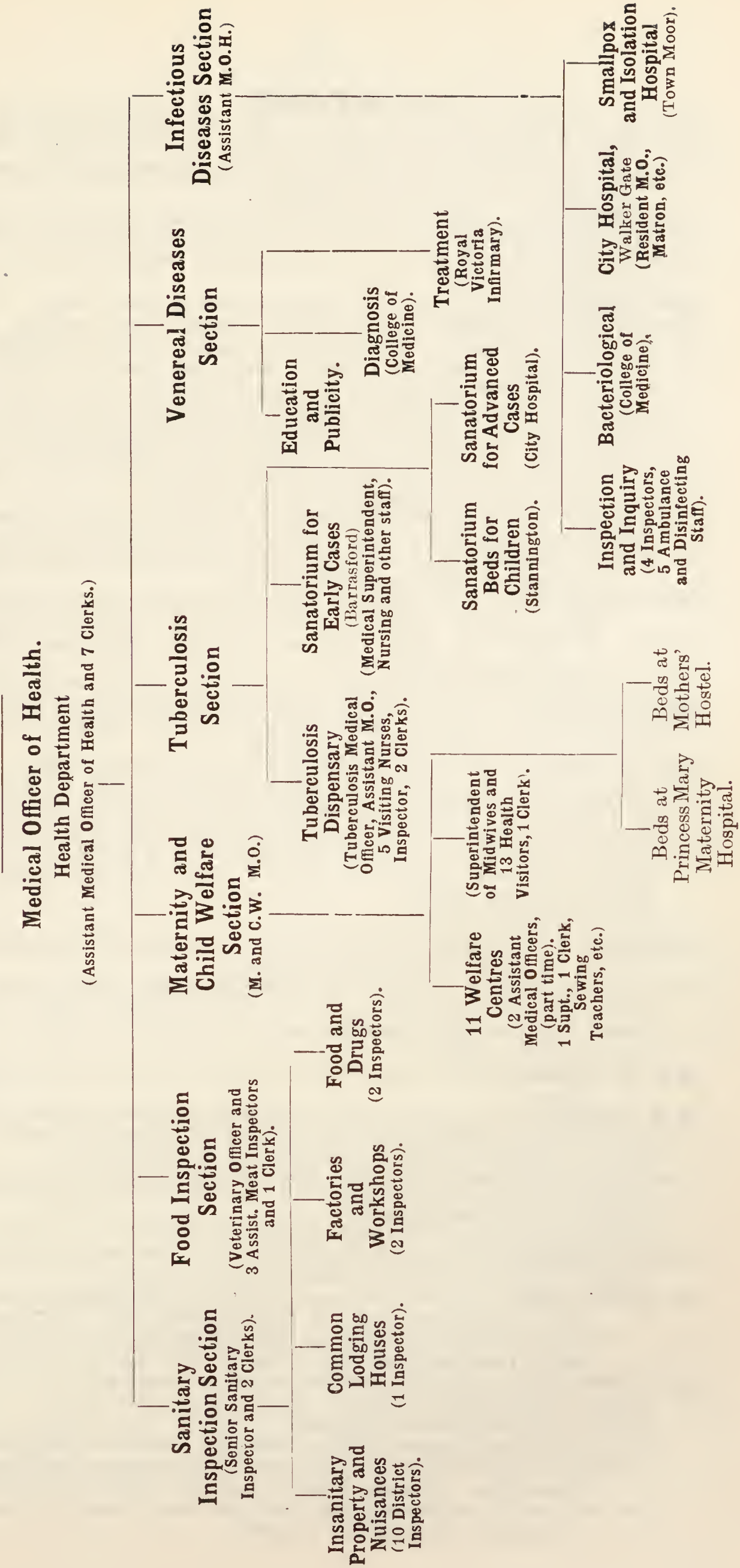
* „ JOHN BARKER.

* Member of the Health Committee.

† Co-opted member.

‡ Appointed by City Council.

Table showing the various Sections of the Health Committee's work which is under the direct charge of the Medical Officer of Health.



STAFF.

HAROLD KERR, O.B.E., M.A., M.D., Ch.B., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

S. J. CLEGG, O.B.E., M.D., Ch.B., D.P.H. (Deputy Medical Officer of Health), till July 6th, 1923.

T. N. V. POTTS, M.D., B.S., B.H.Y., D.P.H. (Assistant Medical Officer of Health), from July 21st, 1923.

WM. HUDSPETH, Senior Sanitary Inspector (retired April, 1923).

CHRISTOPHER RAIMES, Chief Assistant Inspector and Assistant Workshops Inspector. Senior Sanitary Inspector from April, 1923.

WM. CATTLIFF, Assistant Inspector under the Food and Drugs Acts. (Chief Assistant Inspector from April, 1923).

ADAM FLOCKHART, Assistant Inspector under the Food and Drugs Acts.

ISAAC CLARK, **JAS. McNICHOL**, Assistant Workshops Inspectors.

E. W. SCOTT, **JAS. HUNTER**, **W. F. BACON**, **JAS. McKENDRY**, **RICHARD REDPATH**, **L. W. JOHNSON**, **THOS. HESLOP**, **WM. GRAY**, **ARTHUR ROWE**, **WM. E. PERKINS**, District Inspectors.

GEORGE HARDIE, Assistant Inspector of Common Lodging Houses.

WM. BEAN, **C. R. CRAIG**, **WM. COCKBURN**, Infectious Disease Inspectors.

JAS. ROBSON, **JAS. BRUCE**, **JNO. R. CRAGIE**, **J. W. ROBSON**, **THOS. MOORE**, Ambulance Drivers and Disinfectors.

WM. MILNE, ***GEO. CUTHBERTSON**, ***ALFRED HEDLEY**, M.S.M., ***ALEC M. WALKER**, **JOS. GILHESPY**, **H. G. OLIVER**, **TAYLOR RICHARDSON**, **F. T. H. BELL**, **ROBT. LAWSON**, **IVY GOODHALL** (Typist), Clerks in the Health Department.

(Those marked * hold the Sanitary Inspectors' Certificate of the Royal Sanitary Institute).

THOS. PARKER, F.R.C.V.S., Veterinary Officer and Inspector of Provisions.

THOS. DODDS, **JAS. M. ANDERSON**, **JOHN FLANAGAN**, Assistant Inspectors of Provisions. **NORMAN DICKSON**, Clerk.

A. F. G. SPINKS, M.D., Maternity and Child Welfare Medical Officer.

a **GEORGINA B. CAMERON**, Chief Health Visitor and Supt. of Midwives.

a **CATHERINE M. THEXTON**, **c** **MARY LEVINE**, **b** **MARIAN MOODY**, **c** **LIZZIE ISA. PRITCHARD**, **c** **LOUISE SHELL**, **b** **MAISIE L. HOPPER**, **d** **FLORENCE MARTHA HATFIELD**, **e** **MARY F. HARTWELL**, **b** **MARY I. WIGHAM**, **d** **HILDA MORTON**, **d** **NORAH B. WILLSON**, **d** **M. AKERIGG**, **d** **MARGARET HARKER**, Health Visitors.

EDITH RODGERS, Clerk.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates. **b** C.M.B., General Nursing and R.S.I. **c** C.M.B., and R.S.I. **d** C.M.B. and General Nursing. **e** C.M.B., General and Fever Nursing).

H. GLEN DAVISON, M.D. } Assistant Medical Officers (part

MABEL CAMPBELL, M.B., Ch.B. } time), Welfare Centres.

ANNIE G. BAINBRIDGE, Superintendent of Welfare Centres.

AMY RODGERS, Clerk.

WM. H. DICKINSON, O.B.E., M.D., M.R.C.P., Ch.B., D.P.H., Tuberculosis Medical Officer.

N. R. BEATTIE, M.D., B.S., B.H.Y., D.P.H., Assistant Tuberculosis Medical Officer.

a **MARGARET L. HUTCHINSON**, **c** **CONSTANCE M. BAYNE**, **d** **ANNIE BOOTH**,

a **W. E. DALE**, **b** **J. P. KENMIR**, Tuberculosis Visiting Nurses.

(Qualifications of those marked **a** General Nursing. **b** General Nursing and C.M.B. **c** General Nursing and Health Visitors and School Nurses Certificates of R.S.I. **d** Fever Nursing).

J. BROWN, Assistant Inspector.

GEORGE MAGNAY and **WINIFRED MCGILLAN**, Clerks.

C. G. R. GOODWIN, M.R.C.S., L.R.C.P., Medical Supt., Barrasford Sanatorium.

FRANCES BAGULEY, Matron; Sister, Nurses, Servants.

R. SANDILANDS, M.B., Ch.B., D.P.H. (to Sept.), **G. HURRELL**, M.B., B.S.,

B.H.Y., D.P.H. (from Sept.), **I. McLACHLAN**, M.B., B.S., (temporary),

Resident Medical Assistants; **NEIL MACLAY**, M.B., F.R.C.S., Consulting Oto-rhinologist, City Hospitals for Infectious Diseases.

H. E. COOK, Matron, City Hospitals for Infectious Diseases.

JESSIE LAING, Assistant Matron. Sisters, Nurses, Servants.

HELENA N. HARRINGTON, Dispenser.

JAS. COCKBURN, Engineer. **GEO. COCKBURN**, Assistant Engineer.

HERBERT BLACKTIN, **FRANK HARRINGTON**, Lodge Keepers, City Hospital, Walker Gate. Firemen, Porters, Gardeners, Joiner, and Handyman.

JOS. W. and **JANE STEPHENSON**, **JAS.** and **MARY GREGAN**, Caretakers at Smallpox and Isolation Hospitals.

**To Councillor R. W. SIMPSON, M.B., Ch.B.,
etc., Chairman of the Health Committee of
the Corporation of Newcastle-upon-Tyne.**

SIR,

1923 was a year of continued and intensified industrial depression and disturbances. Unemployment figures remained high, and the year will long be remembered for the enormous demands upon public assistance rendered necessary by the general distress. At the end of 1922 19,500 men, and 1,200 women were idle; and in 1923 there were between 16,000 and 18,000 men and 1,000 to 1,400 women out of work during the greater part of the year. There was a great lock-out of boiler-makers, which lasted for seven months, and accounted for a large amount of unemployment in all occupations connected with engineering. It cannot be said that the position of trade generally showed any real improvement by the end of the year.

Since November, 1920, the cost of living has steadily declined from its maximum of 176 per cent. above 1914 to 77 per cent. above the pre-war figure at the end of 1923.

Had it not been for the unemployment benefit, for the relief administered by the Guardians, and for the medical and maternity benefit under the Insurance Act, the lot of a large proportion of the population of Newcastle would have been truly deplorable. Poverty means deprivation of the necessities of life, which gives direct encouragement to disease, and in spite of the vast expenditure on relief, the year's hardships have left their mark upon certain sections of the people.

The year as a whole (apart from certain features to be referred to), has been an exceptionally healthy one, and the general death rate was lower than ever before, but in the case of tuberculosis, a sure index of the vitality of the community, there is a sinister increase of cases, though the number of deaths is slightly below that of previous years.

The Registrar-General estimated the **POPULATION** at the middle of the year to be 283,800, as compared with 278,400 as found by the Census in 1921.

The number of **MARRIAGES** in the City during the year was 2,159, as compared with 2,234 in 1922 and 2,567 in 1921.

The **BIRTH RATE** was 22·4 per 1,000 population, as compared with 24·8 in 1922, and 26·2 in 1921.

The **GENERAL DEATH RATE** was 12·9 deaths per 1,000 population in 1923, as compared with 14·2 in 1922, 14·1 in 1921, and 14·0 in 1920, and was the lowest ever experienced in Newcastle.

As compared with the country generally, Newcastle has a relatively (only) high birth rate. The death rate is slightly above that (11·6) for the 105 great towns, and this is probably ascribable to the overcrowded housing conditions which prevail.

The *Natural Increase* of population (births minus deaths) amounted to 2,708.

Climatically the year was an unpleasant one, with a heavy rain fall and low temperatures which, however, hindered bacterial growth and the breeding of the flies that play so active a part in the distribution of disease germs.

Unfortunately, also, there was little sunshine, and in this respect Newcastle suffered unduly. Since the beginning of July, 1923, sunshine records have been kept by Armstrong College at the College, and at Cockle Park (out in the country a few miles north of Morpeth), and these have been made available by the courtesy of Professors H. Stroud and D. A. Gilchrist. In the half-year 513 hours of sunshine were recorded at Armstrong College, while there were 725 at Cockle Park. Lack of sunshine may assist in the discouragement of germ growth, but that slight gain is far more than outweighed by the loss of stimulating effect upon health generally, notably in children.

Atmospheric pollution, which in preceding years had shown steady diminution and improvement, increased substantially in 1923, and, no doubt, is responsible to some extent for the relatively low sunshine record within the City.

A broad analysis of the causes of death indicates a slight drop in the number of deaths from conditions affecting the **Circulatory System**—the heart and blood vessels. These diseases are generally associated with old age, prolonged physical strain, and a certain proportion with old venereal disease and alcoholic indulgence, and are generally characteristic of the later ages of life. Unfortunately this drop may merely be due to the unemployment which would, of course, affect older men in the first instance.

The number of deaths from **Respiratory Diseases** (pneumonia, bronchitis, etc.), is the lowest since 1912, and far below that of the last few years since the big epidemic of influenza in 1918-19.

Diseases of the Nervous System claimed exactly the same number of victims as in 1922, these being a source of morbidity that has become much less since the strenuous years of the War.

Digestive Diseases have increased somewhat over the previous year, but are still far below the figures since 1912. This is quite consistent with the theory previously suggested that general shortage of money, with a consequent limited choice of dietary and restriction to the plainer and more wholesome kinds of foods, has its compensations.

Cancer, after showing a tendency to decline slightly in Newcastle for some years, has once again registered an increase in fatality, and the number of deaths in 1923, namely, 324, is the highest yet recorded. In 111 of these the disease affected the stomach or liver, and in 68 the intestines, that is to say, in more than one-half the part affected was the digestive tract. In 63 cases the part involved was the female genital organs or breast, and in 29 cases some part of the mouth.

The gradual, if slow, progress of cancer as the cause of death is naturally causative of much concern. True, many more young lives are being saved, and consequently more people now live to reach the age at which cancer takes toll. Also, since deaths from so many other causes are being prevented, or at least lessened, it may be argued that as we are bound to die we must die of something, therefore the secret of cancer control being as yet unknown, that disease will continue to take increasing toll until its prevention or cure is discovered. The position has given an enormous stimulus to research, and innumerable observations and experiments are being carried out all over the world,

while the Ministry of Health has recently set up a Special Committee which is studying and collating observations from all aspects, clinical, pathological, epidemiological, statistical, and so forth. Special records of the disease are being kept in a number of the large cities in the country, and are being closely studied with a view to discovering any particular incidence or tendency to occurrence of the condition. At present an intensive survey of cancer of the breast is being conducted, and the data for Newcastle suggest at the moment that operative treatment is not being resorted to as early as it should be, and later in fact than in the other big cities in which the position is being studied. This emphasises what has continually to be pointed out: that the grave danger in the disease is that its hidden or unrecognised commencement permits that firm establishment which is the main obstacle to its cure, of which there is a fair prospect if the aid of the surgeon is invoked in the early stages. Any abnormal lump or swelling or discharge, therefore, should have immediate medical attention.

In view of the recent introduction of insulin in the treatment of **diabetes**, one is naturally on the look out for results in the mortality figures. Insulin, however, only became available locally for general use about the latter half of 1923, and consequently there is no diminution yet visible in the number of deaths from diabetes. A note of warning has been sounded by those who have most experience in the application of the remedy—firstly, that it is not a cure for diabetes, but merely supplements a defective function and requires continuance; secondly, that the dosage must be sufficient, as is too often not the case; and thirdly, that for some considerable period at least a patient must be dieted, even although he is receiving insulin,

and failure to recognise this fact may be followed by serious consequences. We may confidently hope for a definite drop in the death rate from diabetes in the present year.

The incidence of **EPIDEMIC AND INFECTIOUS DISEASE** was again very low, except for a widespread outbreak of measles in the first half of the year.

Measles occurs in regular epidemic waves, usually about every three or four years; the last crest was in 1919, the one before that being in 1914-15. In 1923 there were 6,875 cases notified and 152 deaths, and the disease was of rather more severe type than in 1919. In 1915, before the system of visiting infected houses and advising the mothers in the care of the children came into vogue, there were 215 deaths, and in the previous year (1914) 212 deaths. As the type of measles last year appeared to be much the same as in 1914-15 there would appear to be a definite advantage from the work of the Health Visitors.

Whooping Cough was more prevalent than it had been since 1918, and exacted 78 deaths.

Typhus and **Smallpox** were entirely absent. With the latter disease occurring continuously in districts within easy distance of Newcastle our escape is noteworthy. A brisk vaccination campaign was carried out quietly during the latter months of the year, and at least 21,000 persons were vaccinated or re-vaccinated. Newcastle is relatively, but only relatively, a well vaccinated community, and there is little doubt that that fact has played no small part in the exclusion of smallpox from the City.

A case of smallpox occurred in another district, in the family of an assistant in one of Newcastle's largest drapery establishments. The assistant was in close con-

tact with the patient at home. Immediately the case was diagnosed and reported to the Newcastle Health Department by the Medical Officer of Health of the district in which the patient lived, the drapery stores were visited and every employé in the place was vaccinated forthwith. A private letter was sent to the head of most of the other employing establishments in the business portions of the town, pointing out how serious would be the occurrence of a case of smallpox amongst the staff, and asking for vaccination to be advocated among them. This proved highly successful, and so far at least as the big shops and businesses and other offices are concerned, a satisfactory line of defence was thus made good.

It needs something of a scare to induce some people to protect themselves and their children in this way now, and last year showed a substantial increase in the number of primary infantile vaccinations, which rose to 70 per cent. of all births.

Typhoid Fever cases fell again to 7, with one death. This disease is now practically extinct. Recent research suggests that its incidence depends to a greater extent upon satisfactory street and back lane cleansing than has been appreciated hitherto, and the introduction of improved methods of road surfacing and mechanical sprinkling and sweeping has done much to assist in the extermination of infection.

Summer Diarrhœa has nowadays less than half the incidence that it had 10 years ago, probably from the much safer methods of feeding young children, inculcated by the Maternity and Child Welfare Sections of Health Departments.

Strenuous advocacy of breast feeding for infants, and the safeguarding of the purity of milk supplies, with substitution of dried milk for fresh where the cleanliness of the latter cannot be relied upon, have effected wonders.

Diphtheria and **Scarlet Fever** were both of very low virulence, as may be seen by comparing their case mortalities of 5 per cent. and 1 per cent. respectively with 30 per cent. and 4·5 per cent. 25 years ago.

Both diseases are usually so mild that their continuance is due to the difficulty in recognising them, and to their spread by persons who are unaware that they have the infection.

A case of **food poisoning** was reported from a neighbouring district, the suspected source of infection being mussels purchased in the Bigg Market. This trade is under fairly close supervision, the source of supply being investigated periodically. Repeated samples were taken from stocks, but no examination disclosed harmful bacterial contamination. The chief sources of mussels sold in Newcastle are the northern shores of the Solway Firth, from beds whose freedom from pollution is vouched for by the local health authorities, and Holland, each of whose consignments of mussels is accompanied by an official warranty.

There were two cases of **Acute Poliomyelitis**, or infantile paralysis, both of whom recovered, although one of them was left with a degree of permanent paralysis.

There were 7 cases of **Cerebro-Spinal Fever**, all of whom died, and two of **Encephalitis Lethargica** (so-called "sleepy sickness,") both of whom died, together with another case that had been notified in 1921.

There were two further deaths assigned to different forms of "Encephalitis."

Reference is made to **Tuberculosis** under a special heading later.

Hospitals for Infectious Diseases.—There were 991 fever patients—the lowest number since 1910—and 211 cases of pulmonary tuberculosis isolated at the *City Hospital, Walker Gate*. The fever case mortality for the Hospital was 7·6 per cent.

The *Smallpox* and *Isolation Hospitals* were in use from 7th to 14th March, and 4th to 11th July, 1923.

Valuable work in connection with the complications of scarlet fever has been carried on during the year. Specialist service (by DR. NEIL MACLAY), inaugurated in 1921, for the treatment of nose and ear discharges, was continued. The results showed a definite decrease as compared with pre-treatment years in the number of days in hospital for patients suffering from abnormal discharges from ear and nose, though not to the same extent as in 1921-1922. This is explainable by the fact that there were fewer nasal discharges, and a relatively larger proportion of ear complications necessitating rather serious operation, and consequent longer subsequent stay in hospital. There is little doubt that but for the operative treatment the majority of these cases would have gone to swell the ranks of that particularly distressing class of case that suffers from chronic "running-ear," and creates a serious problem for the Education Department in the first instance, and too frequently develops deafness, and even grave cerebral complications later. The advantage of this early thorough treatment to such patients is incalculable, since it saves them pain and anxiety, to say nothing of

their hearing, in after years, while their parents are spared much worry and expense, often fruitless, in endeavouring to rectify that which might have been put right comparatively easily in the beginning.

The very interesting experimental work concerned with prophylactic inoculation of scarlet fever patients against septic complications has also been continued, on the lines originally adopted by DR. S. J. CLEGG, alternate scarlet fever patients being inoculated with vaccine prepared from other patients. In 1923, of 611 scarlet fever patients admitted to Walker Gate, 258 were treated with the stock vaccine. 9·6 per cent. of these developed subsequent otorrhœa or rhinorrhœa, whereas 13·5 per cent. (or half as many again) of the uninoculated suffered from these complications.

Bacteriological Examinations.—4,681 specimens were submitted for bacteriological examination by the Department of Bacteriology at the College of Medicine. This is a slight decrease upon the number for the previous year. 1,560 of these were in respect of diphtheria, tuberculosis, or enteric fever; 2,431 were for venereal disease; 450 were of milk; 180 of water; and the remaining 60 were special investigations of a varied nature, including virulence tests for diphtheria, examinations for dysentery, bovine tuberculosis, and food poisoning.

The *Disinfecting Stations* at Walker Gate and at the Moor Hospital dealt with 35,195 articles from the City and the Hospitals.

A feature of modern preventive medicine is the discontinuance of much of the chemical disinfection previously regarded as essential routine, and during the

past year the total amount spent by the Health Department on chemical disinfectants (formalin, izal, etc.), only amounted to £45, of which £11 was for the Hospitals. Reliance is placed mainly on efficient steam disinfection, and on soap and water, "elbow grease," and fresh air.

The work of the **Venereal Disease** Clinic at the Royal Victoria Infirmary has been carried on steadily. PROFESSOR R. A. BOLAM, Chief Specialist Medical Officer, again reports an increased number of attendances and a slightly decreased number of patients as compared with the previous year. 2,303 persons from Newcastle attended 33,139 times at the out-patient clinic and occupied beds in the wards for 349 days, as compared with 28,132 attendances by 2,559 persons at the out-patient clinic, and 405 in-patient days in 1922.

There were 890 new cases in 1923 as against 1,012 in 1922, and 1,169 in 1921. The work of the clinic is of the highest order, but it still continues to be hampered, and unfortunately last year to an increasing degree, by the tendency on the part of patients to cease attendance before a cure can be guaranteed. Thus while 23 per cent. of patients defaulted in 1922 exactly double the proportion, or 46 per cent., were defaulters during 1923. Fortunately these people have for the most part ceased to be infectious.

Endeavours to get in touch with patients are extremely difficult owing to the fact that letters may be opened by other members of the family, or may get into the hands of persons for whom they are not intended, and while personal enquiries are well nigh impracticable, since the patient's condition is usually a secret to himself, these efforts have been reluctantly discontinued until some better method is available.

Medical opinion is still, on the whole, against any system of compulsory notification, although this has been enforced in regard to persons ceasing treatment before cure in several of our overseas dominions and in a number of foreign countries, and in these the Local Authority is empowered to enforce continuance of treatment.

A weakness that still exists in the preventive machinery is that due to lack of hostel accommodation for infected girls and unmarried mothers, whose circumstances render them unable to obtain and continue treatment.

Special attention is given to the question of venereal infections in the Maternity and Child Welfare Centres, and cases discovered are put into touch immediately with the clinic. During the last four years there has been a steady decline in the small number of deaths of infants certified as due to syphilis, from 12 in 1920 to 5 in 1923.

During the same years there has been a substantial decrease in the number of notified cases of **ophthalmia neonatorum**, usually due to gonorrhœal infection from the mother. 116 cases were reported in 1920 and 70 in 1923.

Of the 256 registered blind persons in Newcastle to-day, 57 are said to have been blind from birth, but there is only one blind child under five years old, and none under one year. So much for the results of looking after the eyes of the newly born, and of the notification of ophthalmia.

During the year the Medical Officer of Health gave addresses on venereal disease and other public health subjects to various social bodies.

The four Police Women continued to do valuable work. Their service lay mainly as matrons, and in patrol duty in public places and detective work in connection with charges of abortion and treatment of disease by unqualified persons.

The **MATERNITY AND CHILD WELFARE** Section (under DR. A. F. G. SPINKS) reports a year of ever increasing effort. There is little doubt that this is the section of the Department which holds the chief place for popularity with the general public, the result of the greater understanding and appreciation of its purpose and methods.

Unfortunately, those two scourges of the early years of life, measles and whooping cough, were rampant during the year, and took heavy toll, so that although there has been a great gain in other directions, particularly in the respiratory diseases (bronchitis, pneumonia, etc.), this was more than counter-balanced by the deaths from these two epidemic causes, and the infantile mortality rate for the year was equivalent to 98 deaths of babies under one year per thousand births, as against 92 in 1922.

The measles epidemic as stated before was one of the most extensive of recent years, and of severe type. It monopolised a considerable proportion of the energies of the Health Visitors, who were indefatigable in their attendances at affected houses, and but for this the mortality would probably have been as heavy as it was in the previous big epidemic in 1915 before this work was undertaken.

Whooping cough is a disease that we have not yet been able to tackle satisfactorily, and the advisability of having it made compulsorily notifiable to permit of similar service from the Health Department to that rendered in measles has been the subject of much thought.

Generally speaking, poverty and child wastage go together. The heaviest mortality rate is seen in St. John's Ward (148), All Saints' (120), Stephenson (113), Byker (112), Armstrong (111), whereas in Heaton the figure is only 52, or approximately one-third of St. John's, and in Arthur's Hill 70. But the lowest infantile mortality rates are not necessarily characteristic of the wealthier districts, and in the year under report Jesmond had a rate of 83 per cent., and Dene 88 per cent.

High birth rates and high mortality rates generally run together, though not always. In 1923, however, Walker had the record of 34·6 births per 1,000 population, with an infantile mortality rate of only 89. St. John's, however, had a birth rate of 27·3. Arthur's Hill, with its usual low birth rate (11·5), had an infantile mortality rate, as mentioned above, of 70. In Dene the same low birth rate had a mortality rate of 88.

Maternal mortality remains practically stationary. It amounts to approximately four maternal deaths in every thousand births, but this takes no account of the amount of injury, disability, and subsequent ill-health that results from child bearing. It is satisfactory to note the increasing interest that is being taken in regard to this problem, with which is so closely incorporated the one factor of infant welfare in which very little progress has been effected so far, namely, deaths due to antenatal conditions.

The work at the *Welfare Centres* has continued to develop satisfactorily. Two new Centres, at Walker and Scotswood, were opened in June, and the number of medical sessions was increased from 16 to 18 a week. In addition there are 14 domestic economy sessions weekly for mothers. 14 Health Visitors are engaged in the Maternity and Child Welfare Section, which only means one to every 20,000 of population, a proportion that is inadequate for the insistent needs of a service that yields so prompt and excellent a return in human life. Not only do the Health Visitors follow up from birth two-thirds of all babies born in the City, and attend at the Welfare Centres, but they are also required to pay special visits to all notified cases of measles, pneumonia, and ophthalmia neonatorum, as previously explained.

Appreciative reference should be made here to the excellent work of the ladies who give regular assistance voluntarily at the Centres, both on weighing and doctors' days, and at the sewing classes.

The total attendances of mothers with their babies at the Centres was 49,110, which represents 300 more children than in 1922, and 5,500 more attendances ; also, which is of importance, the average attendances per individual increased from 7·4 to 8·2. The number of children to be interviewed at each session was far too great for really satisfactory work, and this was only partially relieved by the additional centres and sessions already mentioned.

There is much room for improvement in regard to the attendance of expectant mothers at the ante-natal sessions, at which 281 sought advice on 618 occasions. This is a branch of work to which the greatest importance is attached, and special steps are being taken to develop it considerably.

As emphasised in previous reports, welfare centres exist not for the purpose of treating an established disease, but for keeping healthy babies well, and it is a notable fact that among the children attending the centres regularly the deaths only amount to something under a quarter of the proportion for the City as a whole. Also it is found that when babies are brought to the centres after a more or less prolonged absence there is found to be a distinct falling off in progress, as compared with the regular attenders, in over nine-tenths of them. Babies in need of medical treatment are referred to the family doctor or an appropriate institution.

In conjunction with the welfare centres dried milk has been distributed, under the closest scrutiny as regards its recipients, to mothers who are themselves entirely unable to provide it for the babies. About 15 tons, equivalent to approximately 20,000 gallons of fresh

milk, were given free to 1,520 women and babies, and sanctions for about the same amount at cost price were given to 968 persons. The former figure shows an increase of about five tons, or 50 per cent., upon the previous year, and the latter a decrease of nearly three tons on the previous year. There has been a steady falling off in the cost price purchases for three years now, owing to the financial stringency among the poorer sections of the industrial classes.

The opening of the *Princess Mary Maternity Hospital* in the late autumn (in the remodelled premises formerly held by the Industrial School) constituted another milestone in progress, and so well is the hospital serving the City that already further extensions have to be contemplated. It is a voluntary institution, containing 90 beds for patients, accommodation for 6 medical students and 30 student midwives, and will shortly contain also a Maternity and Child Welfare Centre for the Corporation in place of that at present situated in hired premises in City Road. It will also include a ward for weakly babies. The Maternity Hospital is now one of the largest training schools for midwives in Great Britain. The closest co-ordination exists between its administration and that of the Health Department, the Medical Officer of Health and the Maternity and Child Welfare Medical Officer both being members of the Honorary Staff, as are also all the part-time medical officers employed in the Department's Welfare Centres.

The *Hostel for Unmarried Mothers* and the two *Day Nurseries* in the East and West End of the City have continued their useful functions in co-operation with the Maternity and Child Welfare Section. The West End Day Nursery has evolved some modifications

of function, in that the institution is undertaking treatment of a few "wasting" children, and is also training children's nurses.

Midwifery practice is in fairly reliable hands in Newcastle, the handywoman having almost entirely disappeared. Of the births in the City 28 per cent. are attended by doctors, 36 per cent. by the Maternity Hospital, and 35 per cent. by midwives, and of these latter there are now only seven who are uncertified by examination.

Close association continues between the Superintendent of Midwives (Miss G. B. Cameron) and the midwives, and in addition to her routine visiting and inspection Miss Cameron has a fortnightly meeting for midwives in the Health Department, when discussions take place and midwives are kept in touch with progress in their craft.

Doctors were sent for by midwives on account of complications or emergencies in 171 instances.

With all this improved machinery and the development of ante-natal work, there is good hope that some reduction will be effected in maternal mortality, as has already been accomplished so magnificently in the case of the babies.

TUBERCULOSIS.—The progress effected during recent years in the war against tuberculosis has continued. If the death rate has only been reduced slightly below that of the previous year at least there has been no retrogression, and the death rate from all forms of the disease has still further declined from 1.50 to 1.46 per 1,000 population. Thirty years ago the rate was 3.52.

The course of tuberculosis in 1923 has not, however, been altogether satisfactory, since during the latter half of the year there was a distinct increase noted in the number of cases, more particularly among women, and this was probably the result of the continuance of the hard times in the various staple industries of the district, and the consequent privations through unemployment. The fact that other circumstances, such as housing and climatic conditions, were much the same as in previous years, and that mortality rates which do not depend in the same way upon social hardship for the most part showed an improvement, would appear to justify this deduction. More than any other morbid condition tuberculosis is a disease dependent upon environment, habits, and the prosperity or otherwise of a community, and to combat it it must be attacked from every possible point. The specific anti-tuberculosis scheme of a Health Authority can effect little unless co-ordinated with an active sanitary policy generally, and the municipality in whose area tuberculosis will take least toll is that which does most to improve the conditions of life generally for its citizens. It is now well recognised that the mental state influences susceptibility to disease. Hence the greater healthiness of people during periods of prosperity and freedom from worry, while anxiety and depressing surroundings sap the power of resistance. Anything, then, that can be done to improve housing conditions and the surroundings of the homes, to purify the atmosphere, and so give freer access to the life-giving sunshine, is to the good. Bad economic conditions, unfortunately, the Local Authority cannot control, but it can do much to mitigate the asperity of their consequences.

The direct anti-tuberculosis machinery of the Health Department works in the closest co-operation with every other agency which can exert any influence towards this end. The *Tuberculosis Dispensary*, under the immediate charge of the Tuberculosis Medical Officer (Dr. W. H. DICKINSON) has been fully occupied, receiving, examining, referring for appropriate treatment, following up, consulting and recording. Its assistance is invaluable, since through it every possible means of helping the unfortunate sufferer is made available to him. And by no means least in importance, it is accumulating a mass of information of the greatest use in directing future lines of action.

As has been reiterated in various reports, tuberculosis is undoubtedly curable, but the cure takes time, at least a year or two, and the chances diminish rapidly with postponement of the commencement of treatment. The vast majority of sufferers do not seek medical advice early or the presence of the disease is not recognised until it is well established, consequently there is always difficulty in obtaining the type of case which is likely to be cured by relegation to a Sanatorium, and while the beds in the Hospital for Advanced Cases are easily kept occupied, there are always places to spare at Barrasford Sanatorium. Indeed, there was a definite shortage of beds at Walker Gate throughout the year, a state of affairs that has since been remedied. Strenuous efforts are being made to get in touch with patients at an earlier and more hopeful state of their malady.

The first essential in modern treatment of cases in the acute state is rest ; fresh air, generous diet and good nursing are valuable accessories. Rest means complete physical quiescence, even of respiratory movement in a damaged lung in some instances, in order to enable it to

heal. Pneumo-thorax is a method by which this last is obtained, and it is used largely both at Barrasford and at Walker Gate with much advantage. The procedure consists in causing the lung to collapse by admission of gas between it and the chest wall. The installation of an X-Ray outfit at Barrasford during 1923 has been followed during the present year (1924) by a similar installation at Walker Gate, and this equipment has been an immense boon in diagnosis and in watching progress or arrest of the disease.

A year ago the researches and discoveries by Spahlinger in Switzerland and Dreyer at Oxford, much discussed in the public press, were giving rise to great hopes of the discovery of means of immediate cure of the scourge, but there has been no further announcement. Premature disclosures of such a nature, unproved and unconfirmed, are greatly to be deprecated. Continuance of patient research, however, is bound to triumph ultimately, and if not to-day then before very long we may confidently anticipate that a specific will be discovered.

Meanwhile the Health Department continues to look after the individual, his personal circumstances and his environment. In regard to the last the efforts are gravely hampered by continued insufficiency of good houses and unsuitability of many of those that are in existence. Progress, however, is being made in this respect, and quite considerable housing schemes are gradually coming to fruition.

As usual the poorest and most congested wards show the highest prevalence of tuberculosis. The death rate from phthisis was 2·27 per 1,000 population in Stephenson Ward, and 2·07 in St. Lawrence, while in Jesmond it was only 0·56. Over a period of nine years, the average tuberculosis death rate for St. Nicholas' Ward was

2·55, and for All Saints' 2·53 per 1,000 population, whereas the corresponding figures for St. Thomas' and Jesmond Wards were 0·84 and 0·70 respectively.

The tuberculosis death rate for the City in 1923 was 1·46 per 1,000 population. In the two insanitary areas ("Percy Street" and "Lower Pilgrim Street)," which have been scheduled during the present year (1924), the death rates were respectively 2·2 and 6·8, whereas the attack rates were 3·7 and 14·6 respectively, as compared with 2·9 for the whole City.

Tuberculous milk accounts for a considerable proportion of the "other forms" of tuberculosis chiefly affecting children, and while great strides have been made in controlling infection of bovine origin, the figure for 1923 shows a slight retrogression, the death rate having risen from 0·35 to 0·36 per 1,000 population. This is good reason for encouraging farmers to build up herds that will pass the tuberculin test, and so qualify for the higher price for milk which such a guarantee warrants. As will be seen subsequently the number of samples of milk found to be tuberculous was lower than in the previous year, the effect of which will be seen some years hence.

The 30 beds held by the Health Committee at *Stannington Sanatorium* have been kept full occupied by tuberculous children throughout the year. The average stay for the boys was 219 days; for the girls 369 days. Of the 37 patients 31 were much improved, 4 improved, and 2 did not respond to treatment.

At *Barrasford Sanatorium*, the Corporation's own institution, 36 of the 90 beds have been in constant occupation by Newcastle cases, and out of 207 total admissions 93 were from Newcastle. The average

duration of stay for patients who completed treatment during 1923 was 119·5 days—just over 17 weeks—3 weeks better than last year, but entirely insufficient for cure.

As emphasised by the Medical Superintendent (Dr. C. G. R. GOODWIN), there is unwillingness on the part of the average patient to regard his condition with sufficient gravity, and in spite of advice to the contrary many patients insist upon leaving the Sanatorium still unfit for work, because they feel well, all conscious symptoms having disappeared for the nonce.

The results of treatment of Newcastle cases were, as estimated at the time of the patients' discharge—fit for work 47, improved 29, without improvement 11, worse 9, died in the institution 1, but the last was not due to tuberculosis.

Further observations have been carried out at the Sanatorium upon treatment with a special bovine tubercle vaccine in a series of patients, the purpose being to stimulate natural production of immunity to the human type of infection. Touch will be maintained with patients who have been so vaccinated in order to watch their subsequent progress.

The rigour of the winter cold was modified by artificial heating in the bedrooms, recreation and dining rooms, and this added greatly to the comfort of the sufferers and had no ill-effect upon their health. There have been other improvements in the amenities of Barrasford Sanatorium during the year, and everything possible is done by the Medical Superintendent, with the ready support of the Committee, to make a sojourn in the Institution as pleasant as possible for those who are so unfortunate as to require its aid.

It is highly gratifying to report that the Education Committee has now established an open-air school for pre-tuberculous children on the Corporation's Pendower Housing Estate, and it is hoped that this will be the forerunner of a number of others, since the results upon the health of the children obtained from such institutions, where these have been in use for some time, are astonishing. The dental clinics of the Education Committee constitute an extremely valuable line of defence against access of tuberculosis to the young body.

The *Voluntary Tuberculosis Care Council*, to which the Health Committee is a contributor, again merits unstinted praise for its excellent public service. Under the general direction of the Tuberculosis Medical Officer the homes of patients have been visited by voluntary workers, through whom help is given in the way of extra food, loan of bedsteads and bedding, and assistance to find suitable employment, with just that touch of personal interest and sympathy that so often makes all the difference in putting heart into the discouraged victim of consumption. The most important feature of this organised after-care is in regard to patients returning home from institutional treatment, who are very apt to slide back into old habits and old ways with consequent relapse of the disease, a retrogression which with a little encouragement might have been avoided.

It only remains under this head to refer to the problem of surgical tuberculosis, for which no provision has as yet been undertaken by the Health Committee, except in regard to a small number of children at Stannington Sanatorium. Up to the present, surgical cases can only obtain treatment in the general hospitals, where they occupy for long periods quite a considerable proportion of the already insufficient beds, and the

question as to what can be done for them is becoming every day more acute. The first responsibility for care of tuberculosis is definitely imposed upon the Municipal Authorities, but in this particular is likely to prove no small thing, since the cost of special provision for surgical cases will be exceedingly heavy.

FOOD AND PROVISIONS. Bovine Tuberculosis.—178 samples of milk were examined for the presence of tubercle bacilli, which were found in eight, or 4·5 per cent. of them. This proportion is the lowest recorded since 1919, when it was 3·6 per cent., and it is a definite improvement upon 1922, the figure for which was 7 per cent. A definite drop is only what one would expect as the result of the special efforts that have been made to raise the standard of milk generally since the introduction of the Government grades. The continued suspension of the Milk and Dairies (Consolidation) Act, 1915, and of the Tuberculosis Order, 1913, is a considerable handicap, for under these there is provision, otherwise lacking, for compelling all Local Authorities to carry out inspection and control of cattle, and provision for reasonable compensation for innocent possession of tuberculous animals. The Milk and Dairies Act, 1922, is insufficient in its scope, and so far as Newcastle is concerned is chiefly useful in that it has given the Local Authority power to license dairymen and their dairies.

Introduction of the Government graded milks, together with the holding of the Royal Agricultural Society's Show in Newcastle in 1923, undoubtedly stimulated endeavour in the north of England, and it is a source of some little pride that Newcastle receives 500 gallons daily of "Certified" and "Grade A (Tuberculin-Tested)" milk, which is roughly one-twelfth of the entire amount produced in the country. True, this quantity

represents not more than one-fortieth of the daily milk supply to the City, but it is a beginning. The chief obstacle to greater popularity is the higher cost, but it is well worth while paying a little more for assured purity and freedom from potential disease.

Few people even among the medical profession itself seem to appreciate fully the extent to which milk acts as the source of tuberculosis, and it is becoming more and more evident that consumption in adult life arises from an original milk infection in early youth. The suggestion one has frequently heard that the ingestion of tubercle bacilli in milk serves to stimulate the production in the body of a natural immunity to the disease is utterly unscientific, since such a method of producing immunity depends upon strict control of dosage. Without this control the number of bacilli ingested may readily overwhelm the natural powers of resistance, and set up the very disease that it is desirable to prevent.

The present system of dealing with milks found to be tuberculous is not satisfactory, since while most farmers are anxious to rid their herds of tubercle-yielders, and as a rule agree to slaughter, others merely divert the supply elsewhere. In Scotland, however, the County Medical Officers of Health possess powers that their English colleagues have not got, and are able to hold up supplies and clear herds in a way that is unknown in this country.

The Veterinary Officer and Inspector of Provisions (MR. THOMAS PARKER, F.R.C.V.S.), reports that the City now contains 25 cow keepers, occupying 39 cow sheds on 26 premises, with 484 milch cows, a decrease of 5 cows since the previous year. Inspection of cow-sheds and

dairies was not nearly as complete as was desirable. During the latter part of the year an extensive out-break of foot and mouth disease implicated a large proportion of the dairy herds and resulted in their wholesale slaughter, which almost put an end to milk production within the City for some months.

Slaughtering is at present carried on in 102 separate premises situated in 15 different localities in the City. Consequently it was quite impossible for the Veterinary Officer and two Inspectors to carry out anything like complete inspection of every animal killed, and the staff was largely dependent upon the goodwill and integrity of the butchers for information as to carcasses noticed to be "not right." In the year under report the number of inspectors was increased by one, and in the present year the Veterinary Officer has received the much needed help of an experienced Veterinary Assistant.

The number of cattle and sheep exposed in the Newcastle Market showed an increase over the previous year of almost 5,000 ; sheep were almost 2,000 fewer, but cattle were about 7,000 more, in spite of closure during several weeks on account of foot and mouth disease. There were almost 11,000 fewer pigs on sale in the market, but large numbers of these animals went direct from the lairs to slaughter houses without entering the market.

Mr. Parker reports that the market trade in food animals shows healthy signs of recovery, and states that with modern facilities it would increase much further. The question of the public abattoir has been raised again, the problem being made the more active by the unsatisfactory state of the market place, and there is now under consideration a comprehensive scheme for

provision of markets, abattoirs, and other necessary appurtenances, not necessarily in the centre of the City where land is expensive and difficult to obtain. The lack of proper facilities for slaughtering and of means for adequate inspection has long been one of the outstanding blemishes upon health administration in Newcastle.

The standard of inspection in force is that which Mr. Parker himself assisted to draft as the recommendation of the recent Departmental Committee on Meat Inspection, of which he was the only veterinary member.

312 carcasses, with 10 tons of meat, were seized and condemned during the year; about one-fourth was tuberculous, that is about half of the beef seized.

182 food carrying vessels came to the Quayside during 1923, as compared with 200 in 1922. All imported articles were kept under supervision by Mr. Parker and his staff.

Food and Drugs Adulteration Acts.—The Inspector under the Food and Drugs Acts (MR. C. RAIMES) reports the taking of 1,147 samples for analysis, including 895 of milk. Of the latter 549 were rough-tested in the Health Department and appeared to be genuine. Of the remaining 346 the Public Analyst (Dr. J. T. DUNN) found 48 to be below the minimal limit fixed by the Sale of Food Regulations, 1901. Of the 252 samples of food and drugs other than milk, two were found to be “not genuine.”

Since 1919 the proportion of milk samples certified “not genuine” has fallen from 11·5 per cent. to 5·6 per cent. 26 cases were taken to Court, and convictions were obtained in 20 of them, with fines aggregating £59 ;

cautions were issued in respect of 23 ; and no proceedings were taken in the remaining case (informal sample). There were four prosecutions for offences other than adulteration, and the fines totalled £4. The fines imposed are not usually such as are likely to serve as deterrents to the dishonest or culpably careless, but it is satisfactory to note that there is a greater inclination on the part of magistrates to regard offences of this nature more seriously than hitherto.

177 samples of milk were examined for evidence of excremental pollution, which was found to an undesirable degree in 28 (or 16 per cent.) as compared with 32 per cent. in the previous year, and 60 per cent. in 1921. This is a vast improvement, and indicates considerably greater care in the handling of this important food. A requirement that all empty milk churns shall be rinsed out with cold water before being returned to their respective farms was put into force at the end of 1921, and there is little doubt that the close observation of this by the retailers in the City has accounted for much of the great improvement that has been effected. Of 19,675 churns examined by the Inspectors only 95 (less than 0·5 per cent.) were found unrinsed, as compared with 230 (2·5 per cent.) in 1922, and this proportion was further declining towards the end of the year, by which time such odd churns as were found uncleansed were practically always so from unintentional oversight. The purpose of this rinsing is not to relieve the farmer in any way of his responsibility for cleansing and scalding his milk vessels, but with the inadequate facilities that most of them possess, thorough cleansing of the churns is exceedingly difficult without a preliminary cold water rinsing before the milk has had time to dry in them.

One firm in the City retails "graded milk," and by the end of the year two farms were producing "Certified" and seven "Grade A (Tuberculin-Tested)" milk. 95 samples of these were taken in the course of the year, and the standard of purity was found to be fairly well maintained.

Farmers generally were inclined to hold aloof from attempts to produce "graded milk" on account of an altogether exaggerated idea of the difficulties, but recent experience proves that quite a number of farmers are actually supplying milk to the City of a purity and quality fully equal to the highest class of "graded milk" without any apparent special effort, and without being aware of the fact. The present position as already stated is that there are plenty of farmers who would be willing to supply "graded milk" if assured of a market, but until the demand is greater they are naturally unwilling to involve themselves in the greater trouble and expense incidental to the establishment of tuberculin-tested herds. This is a matter upon which public opinion requires to be educated, and it is for the Public Health Authority and the medical profession as a whole to see to it.

As stated in this report year after year, practically all the conditions in the present day transport of milk are thoroughly bad, and are a grave disadvantage to producer, retailer, and of course most of all to the consumer, and the responsibility for the conditions of the article when it reaches its ultimate destination lies just as much with the railway companies as with the members of the trade.

There are 271 small shops in which milk is sold with other articles. This represents a slight increase upon 1922, when the number was 266. There has been a substantial weeding-out of undesirable retailers since efforts were first directed towards that end in 1918, when the number of small general shops selling milk was 668. Under the Milk and Dairies Act, 1922, the close control of milk retail businesses has been continued, and in that respect the enactment has proved valuable.

In considering each application for licence, special precautions are insisted upon to prevent contamination of the milk, and the shops, though many, and by no means perfect, represent a considerable improvement upon previous conditions.

In addition there are 200 shops selling sterilised milk in sealed bottles. These also are under close supervision and control, and although the conditions of permit are not quite so strict as in the case of loose milk, the premises are fairly satisfactory.

Similar supervision has been exercised over the ice cream trade (both manufacturers and retailers), and numerous objections have been sustained to the commencement of businesses under unsuitable conditions. It is the policy of the Department to educate wherever possible, and great credit is due to the larger ice cream manufacturers for their ready response, and the practical way in which they have set about the application of the principles advocated. There is one aspect of the ice cream trade that has still to be faced, and which is likely to provide a difficult problem, viz., street vending, for while a vast improvement has taken place in outfits and methods, the present procedure is obviously undesirable and dangerous.

Attention has been given to the growing practice by manufacturers of foodstuffs of adding chemical preservatives for the purpose either of preservation, or, less frequently, of concealing taint. While it is not usual to find such preservatives present in so large a quantity as to be directly harmful, it must be remembered that the practice is so general that in the course of even twenty-four hours a person is quite likely to consume a considerable amount of deleterious material. The commonest substance found is borax, or boric acid, in itself comparatively harmless, but if taken in frequent small quantities as described above, it may be cumulatively very injurious to children, or to persons who suffer, possibly unwittingly, from physical weaknesses, *e.g.*, of certain organs, such as the kidneys.

In certain of our over-seas Dependencies, where much greater attention has been given to this subject than here, the presence of preservative, its nature and its quantity, is required to be declared on every container, and it is to be hoped that a similar edict will shortly be issued in this country. Resolutions in support of this principle were forwarded to the Ministry of Health by the Committee, and questions upon the subject were asked in Parliament by local Members.

Margarine warehouses, bakehouses, restaurant kitchens, and fried fish shops have all been carefully watched. The last named is scheduled as an "offensive trade" in Newcastle, and permits or refusals are dealt with in Committee. A new system was inaugurated of circularising a score or so of adjoining occupiers and owners prior to granting permission to establish a fried fish business in order that information might be available to Committee as to the objection or otherwise of neighbours, and this has worked satisfactorily.

In 180 samples of water examined for evidence of excremental pollution 7 were classified by the Bacteriologist as satisfactory, 84 were reported as doubtful, and 89 as unsatisfactory—cogent proof of the need for the improvement in purification methods now in process of completion by the Water Company.

THE HOUSE AND THE WORKPLACE.—Nuisance Abatement.—The Senior Sanitary Inspector (Mr. C. RAIMES) reports only slightly decreasing difficulty in getting necessary improvements carried out in houses showing remediable defects. In spite of these difficulties, however, although 6,396 notices were served, in only 4 cases (against one owner) had summonses to be applied for, and these were withdrawn on the work being done. This is in accordance with Health Department tradition, force always being regarded as a last resource only.

Many houses, which by pre-war standards are quite unfit for human habitation, are still occupied, and the shortage of alternative accommodation renders it impossible even yet to undertake closures. Although building operations are now under way, it will be some years before the congested conditions in the City are alleviated.

The Cleansing and Scavenging services (under the City Engineer) have not yet returned to their pre-war scale, owing to the high cost entailed, but in no case is refuse removal carried out at a greater interval than a week.

Rather better progress has been made in the conversion of dry closets to the water carriage system, and 175 pail closets, 57 cell privies, and 2 midden privies (234 in all) have been removed during the year, together

with 103 dry ashpits. There remain 4,310 of these abominations in the City, and it is still the cost of conversion which stands in the way of more rapid sanitary progress being made in this direction.

Atmospheric Pollution as measured at the observation station in Davison's Yard, City Road, amounted to a deposit, in that part of the town, at the rate of 1 ton 6 cwts. of solid impurity per acre per annum, or 832 tons per square mile. This is the heaviest measurement ever recorded, and is probably largely accounted for by the output, during certain months of high pressure, of the chimney of our own Tramways Power Station, which is close by. During the latter part of the year the furnace system was entirely remodelled, and has resulted in amelioration of the smoke nuisance from that locality. Much has yet to be effected, however, before the human part in the exclusion of sunlight has been reduced to its lowest dimension. 721 observations were made of 102 industrial chimneys, and 9 of them showed excessive output of smoke on 25 occasions. There were no prosecutions undertaken, but the representations of the Department were all accepted seriously and distinct effort made to prevent a recurrence of the cause of complaint.

Domestic chimneys probably account for at least two-thirds of the smoke and soot over the City, and the gradual substitution of gas or electricity for the dirty and wasteful soft coal fire in the domestic grate is all to the advantage of the public health and of economy. The Corporation Housing Committee renders excellent service and sets a fine example by providing in each of its new houses only one coal fire, the remainder being for gas.

Housing.—511 new houses were added in the course of the year to the City's accommodation, viz., 248 erected privately, and 135 built by the Corporation on the Walker Estate, and 128 on the Pendower Estate. Some hundreds more were in course of construction under the Corporation's schemes at the end of the year. The houses gained in previous years were 523 in 1922, and 305 in 1921, when the first additions since the war were realised. Very many more are still necessary to meet immediate needs. In November, 1923, the City Engineer's census showed 129 empty houses in the City. There were 137 at the end of 1922, and 73 at the end of 1921, as against 244 in August, 1914, and 1,305 at the end of 1912. Overcrowding is the rule, and sub-letting is still rife. There is no means of controlling this last as yet, and one constantly comes across the most heartless cases of profiteering at the expense of unfortunate tenants of so-called "furnished lodgings." The Committee, however, has now taken under consideration the question of appropriate by-laws.

Next to poverty, with its consequent privations, bad or insufficient housing is one of the greatest menaces to the public health. Innumerable cases of gross overcrowding still come to notice, and it is to be hoped that there may be no undue obstacles to the further promotion of housing schemes of every description, public or private.

The 1921 Census figures for the City are now available, and although this portion of the Report is not intended to be of a detailed nature, it is worth while showing here the distribution of the population. These figures are instructive in that they indicate what a definite drift downwards took place in the ten intercensal years.

			1921 Census.	1911 Census.
Percentage of families living in	1 room		11·5	8·3
Do.	do.	2 rooms	25·3	23·7
Do.	do.	3 rooms	25·1	26·3
Do.	do.	4 rooms	19·9	21·0
Percentage of persons living in	1 room		8	5
Do.	do.	2 rooms	26	23
Do.	do.	3 rooms	26	26
Do.	do.	4 rooms	21	22
Average number of persons per house			4·7	4·6

As already stated, disease incidence is intimately associated with housing. In 1923 the general death rate was 17·0 and 16·1 per 1,000 population in All Saints' and St. Andrew's Wards respectively, as compared with 8·1 in Dene and 9·4 in Fenham Wards. In Stephenson the death rate from all forms of tuberculosis was 2·27 per 1,000 population, while in Jesmond it was only 0·56. In St. John's Ward 148 babies under one year of age died to every 1,000 born, in All Saints' 120, Stephenson 113, and Byker 112, whereas in Heaton Ward the rate was only 52 infants per 1,000 births. Over a period of 16 years the deaths of infants per 1,000 births in one-room, two-room, and three-room houses have been respectively 142, 122, and 102.

For a number of years past details have been prepared and kept up-to-date of districts in the City which it was intended to schedule, whenever circumstances permitted, as *Unhealthy Areas* under Part I. of the Housing of the Working Classes Act, 1890. In the year under report the first of these was brought before Council, but a definite decision in regard to it was not

reached until after the end of the year. The representation in question referred to an area on either side of Percy Street, and involved a population of 1,358 persons, living in 395 dwellings contained in 137 houses.

At the time of writing a scheme has been definitely determined upon both in regard to this and a second area in and around Lower Pilgrim Street. It is a condition of such improvement schemes that no house shall be demolished or any occupant dispossessed until there is alternative accommodation available, or provided by the Local Authority. The Housing Committee is making the necessary provision.

Accommodation in the *Common Lodging Houses* continues to be ample. At the end of the year there were 46 such houses as against 47 at the close of 1922. Many of these houses are structurally old and obsolete, but taken all round are extraordinarily well kept and clean. During the previous year (1922) the Committee resolved that in future it should be a condition of registration of common lodging houses that no girl under nineteen years of age shall be admitted to any of them unaccompanied by a parent or responsible guardian. It is believed that prior to this regulation not very many young women frequented the common lodging houses, but consideration of the subject raises again the question—where do the homeless girls of this sort live? There is little doubt, from abundant evidence, that for the most part they occupy “furnished” rooms in tenemented houses, frequently of highly undesirable repute. For such accommodation they are usually compelled to pay exorbitant rents for grossly inadequate return, by people who are well aware of the means of livelihood followed by these unfortunates. This state

of affairs is the strongest possible argument for expedition of special by-laws for the supervision and control by the Health Authority of sub-let rooms.

Factories and Workshops, Offices, Places of Amusement, and Schools.—8,864 inspections of factories and workshops were made and 400 notices to remedy defects were served. The homes of outworkers were also kept under observation.

Samples of *Rag Flock* were obtained as usual, and the institution of control in this matter has now rendered it unusual to find material of so filthy and polluted a nature as was previously in common use among mattress makers and upholsterers.

STAFF.—Reference was made in the report last year to the fact that in 1923 the Department lost two well tried and valued members in Mr. Wm. Hudspeth, the Senior Sanitary Inspector, who retired after 42 years' distinguished service, and Dr. Sydney James Clegg, Deputy Medical Officer of Health, on his appointment as Medical Officer of Health of Durban, after nearly 13 years' service in Newcastle.

Dr. Clegg was succeeded by Dr. T. N. V. Potts, Assistant Medical Officer of Health, Blackburn, who had previously held successive positions as Resident Medical Assistant at the City Hospitals for Infectious Diseases, and Medical Assistant at the Tuberculosis Dispensary, Newcastle.

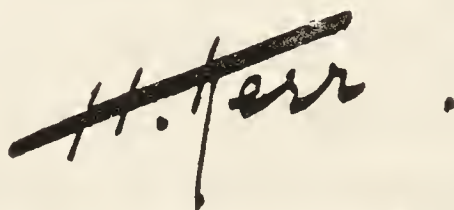
Mr. Hudspeth's successor is his next in seniority on the staff, Mr. Christopher Raimes, who first joined the Health Department staff in 1891, and who has already gained for himself a wide reputation as a sanitary expert.

The Department suffered another loss in the death of Inspector R. T. Morrison, a member of the Infectious Diseases Section.

Acknowledgments.—Where all have striven to fulfil a high ideal of duty it were invidious to make personal reference to individual members of the staff, but I desire to record once again my warm appreciation of the loyalty and excellent service of each one of my colleagues in the Department, and at the same time I would acknowledge gratefully the support afforded me at all times by the Committee, and particularly by yourself.

I have the honour to be, Sir,

Your obedient Servant,

A handwritten signature in dark ink, appearing to read "H. Ferr", with a horizontal line drawn through it.

M.D.,
Medical Officer of Health.

*Health Department,
Town Hall,
Newcastle-upon-Tyne,
1st August, 1924.*

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

Health Report, 1923.

I.—GENERAL.

MORTALITY TABLES,
SOCIAL CONDITIONS, CLIMATOLOGY,
WATER SUPPLY, DISPOSAL OF REFUSE.

Population, Birth Rate, and Special Mortality Rates during the period of the Notification of Infectious Diseases.

[illegible]

† Calculated on population for 1914

‡Calculated on population of 286,571

|| Calculated on population of 287,255.

* Civilians only.

§ 1 an inward transfer.

** Under the heading of Measles, Rubella is included from 1916 onward

Prior to 1911 figures uncorrected for cases belonging to other Districts

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1923—**283,800.**

RETURN SHEWING THE ESTIMATED POPULATION OF THE DIFFERENT
WARDS IN THE CITY, ACREAGE, POPULATION PER ACRE, ETC.

Ward.	Population	Gross Area in acres	Less for Open Spaces in acres.	Nett Area in acres.	Population per acre, gross.	Nett.
St. Nicholas'	3,556	127	1	126	28	28
St. Thomas'	14,740	1,636	1,115	521	9	28
St. John's	15,808	169	1	168	94	94
Stephenson	19,788	215	..	215	92	92
Armstrong	16,362	178	31	147	92	111
Elswick	12,966	253	17	236	51	55
Westgate	15,985	90	1	89	178	180
Arthur's Hill	10,006	142	6	136	70	74
Benwell	20,225	550	29	521	36	39
Fenham	12,172	1,189	..	1,189	10	10
All Saints'	17,969	176	2	174	102	103
St. Andrew's	13,015	173	3	170	75	77
Iesmond	10,777	441	33	408	25	26
Dene	12,875	818	88	730	16	18
Heaton	14,804	225	27	198	66	75
Byker	18,081	140	..	140	129	129
St. Lawrence	20,330	181	7	174	112	117
St. Anthony's	17,356	601	..	601	29	29
Walker	16,985	1,149	34	1,115	15	15
CITY	283,800	8,453	1,395	7,058	34	40

INHABITED HOUSES.—60,137 inhabited houses, which, on the estimated population, shows an average of 4·7 persons per dwelling.

RATEABLE VALUE.—£1,964,534. A penny rate produced £7,563.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being generally engineering and machine making ; conveyance of men, goods, and messages ; building and works of construction, *e.g.*, ship building ; and connected with ships and

boats, sea-faring and harbour work ; food, tobacco, drink, and lodging ; coal and shale mines ; and commercial or business occupations.

The amount of **Poor Law Relief** granted during the year ended 31st March, 1923, was £391,288 for outdoor relief, and £37,633 for indoor maintenance, making a total of **£428,921**, as compared with **£308,323** in the previous year.

The number of registered unemployed fell from 19,626 at the beginning of the year, to 17,719 at its close.

The City contains many **Hospitals** and other medical charities, but since wide surrounding districts are also served by them, figures as to patients treated are not of local value.

MARRIAGES.—2,159 Marriages took place during the year, as compared with 2,234 in 1922, and 2,567 in 1921.

BIRTHS.—6,367, equivalent to a rate of 22·4 per 1,000 population.

DEATHS.—(All causes)—4,298, equivalent to an uncorrected rate of 15·1 per 1,000 population, and, after deduction of the deaths of 789 non-citizens, and addition of 150 Newcastle residents who died elsewhere, to a corrected rate of 12·9 per 1,000 population, the lowest on record. In 1922 the death rate was 14·2.

12 deaths were uncertified (bronchitis, 2 ; convulsions, 4 ; premature birth, 1 ; heart failure, 2 ; heart disease, 1 ; natural causes, 1 ; syncope, 1).

24 *Orders for Burial* (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were given, 9 being in respect of bodies lying in inhabited rooms, and 15 being cases from hospital.

**TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES
OF DISEASE.**

Classification in Table III. of Ministry of Health.

	II. Nervous System.	III. Circu- latory.	IV. Respira- tory.	V. Digestive.	XIII. External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133
1920	384	534	861	275	124
1921	347	581	726	297	113
1922	363	689	913	181	92
1923	363	623	623	219	112

INFANTILE MORTALITY.—623 infants died before completing the first year of life, representing a rate of **98** deaths per 1,000 births.

ZYMOTIC DEATH RATE.—There were 348 deaths from the “ Chief Zymotic Diseases ”—smallpox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, simple continued, and enteric) and diarrhœa (all ages)—equivalent to 1·23 deaths per 1,000 population.

TUBERCULOSIS.—414 persons died from various forms of tuberculosis, 311 being from pulmonary, and 103 from other forms. The equivalent death rates are *All Forms* 1·46, *Pulmonary*, 1·10 ; and *Other Forms than Pulmonary* 0·36 per 1,000 population.

For comparison of death rates with previous years see large table page 50A.

For particulars of deaths, as to site of disease, age, etc., see table, page 58A.

GEOLOGY.—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

CLIMATOLOGY.—The mean barometer reading was 29·85 in.

The mean maximum temperature was 63.7° F., and the mean minimum 34.4° F.

Measurable rain fell on 210 days, amounting in all to 29.21 inches, and as the district average is 27.89 inches, there was an excess of 1.32 inches.

The weather generally suggested that the seasons had become considerably mixed. January was fine and mild ; June was cold but fair. Spring was very wet. In August there was heavy rain, but September and October were dry, whereas November set up a new rain record for itself, giving the heaviest rainfall for that month for twenty-two years.

The wettest month, however, was August, with a total rainfall of 4.29 inches, November coming very close to that with 4.12 inches.

The wettest day was August 20th, when the rainfall recorded was 0.80 inches.

The driest month was June, with a rainfall of 0.99 inches, as compared with an average of 1.64 inches.

The summer and autumn were, on the whole, cold and sunless. There was an overwhelming prevalence of westerly winds. The number of days when the wind was from W., N.W., and S.W. was no fewer than 213, nearly twice as many as the number of days on which the wind blew from all other directions.

The frequency of the direction is shown in the following table :—

W.	on 137 days.
N.	on 18 „
N.E.	on 14 „
N.W.	on 34 „
S.	on 36 „
S.E.	on 28 „
E.	on 18 „
S.W.	on 42 „

The foregoing information is supplied by the courtesy of the proprietors of the *Newcastle Chronicle*.

Cockle Park and Armstrong College.

From the beginning of July, 1923, sunshine records have been available by the courtesy of Professors H. Stroud and D. A. Gilchrist, of Armstrong College. The observations are taken at Cockle Park Farm (some miles north of the City, and in a rural area), and at the College itself. During the second half of the year 513 hours of sunshine were registered in the City, as compared with 725 at Cockle Park.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland.

It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through sand filters at Whittle Dene and Throckley.

In the vast majority of cases the household taps are served directly from the mains without intervening cisterns.

A separate trade supply is piped to some of the great riverside works from a point above the filters.

The bacteriological reports upon the water are given on page 118.

For a number of years past these have been by no means satisfactory, owing to the fact that the consumption of water has exceeded the capacity of the filters for adequate purification. During the year under report the Water Company adopted a scheme, now approaching completion, for supplementing its existing filter beds by a great battery of forty-nine rapid filtration drums, sufficient to deal with seven million gallons of water per diem. These will relieve the pressure upon the present filters, since they will account for approximately one-third of the total daily consumption, and should be adequate for some time to come.

SEWERAGE.—There are 287 miles and 1607 yards of sewers discharging at various points along the seven miles of river frontage directly into the Tyne, which is tidal.

CLEANSING AND SCAVENGING.—With the exception of certain areas, the ashbins are now only emptied once per week instead of twice. With the prevailing high costs it is improbable that the frequency of removal can be increased.

There are 53,936 dry ashtubs and galvanised iron bins, and 53,425 water closets and 4,322 conservancy system closets in the City. Conversion of the latter was proceeding steadily up to the outbreak of war, at the rate of 600 to 700 per annum. During 1923 175 pail-closets, 57 cell privies and 2 midden privies were removed and water closets substituted. All the schools are served by the water-carriage system.

ADOPTIVE AND LOCAL ACTS IN FORCE.

Adopted Acts.—Infectious Disease (Prevention)
Act, 1890. Section 4.

Public Health Acts Amendment Act, 1890.—Part
III—Whole of ; Part IV.—Whole of. .

Notification of Births Act, 1907.

Public Health Acts Amendment Act, 1907.—Part II.—Sections 20, 22, 23, 26, 27, 28, 29, 30, 31, and 33; Part III.—Sections 34, 35, 36, 37, 38, 43, 45, 48, 49, 50 and 51; Part IV.—Sections 52, 53, 56, 58, 59, 61, 62, 63, 64, 65 and 68; Part X.—Whole of.

Local Acts.—Newcastle-upon-Tyne Improvement Act,	1837.
„ „	1846.
„ „	1853.
„ „	1865.
„ „	1870.
„ „	1882.
„ „	1892.
Newcastle-upon-Tyne Tramways and Improvement Act	1899.
Newcastle-upon-Tyne Corporation Act ..	1911.

VITAL STATISTICS, YEAR 1923.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT	Birth Rate.	General Death Rate.	Infantile Mortality Rate.	Death Rate per 1,000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough, and Diphtheria	Tubereu- losis (all causes) Death Rate.
England and Wales	19·7	11·6	69	0·35	†
105 Great Towns (includ. London)	20·4	11·6	72	0·40	†
NEWCASTLE-UPON-TYNE	22·4	12·9	98	0·87	1·46
Hull	23·3	11·4	81	0·29	1·20
Leeds.....	18·5	12·7	89	0·29	1·36
Bradford	18·2	13·7	78	0·39	1·02
Sheffield	19·5	11·5	89	0·34	1·03
Manchester	20·4	13·3	88	0·47	1·54
Salford	20·9	13·5	98	0·48	1·58
Liverpool	24·9	13·7	99	0·78	1·60
Nottingham	20·0	12·1	85	0·32	1·17
Leicester	19·4	11·6	83	0·27	1·34
Stoke-on-Trent	24·6	12·7	93	0·96	1·20
Birmingham	20·4	11·0	72	0·44	1·08
Cardiff	22·3	12·0	74	0·33	1·65
Bristol	19·3	11·7	62	0·46	1·20
Portsmouth	21·0	10·9	52	0·44	0·98
London (County).....	20·1	11·4	61	0·34	1·16
Gateshead.....	26·3	12·8	89	0·97	1·53
South Shields	25·3	13·8	94	1·25	1·83
Tynemouth	24·1	12·7	87	1·23	1·45
Sunderland	24·6	13·8	98	0·94	1·43
Middlesbrough	27·5	13·0	86	0·78	1·40
*County of Northumberland	22·6	11·3	87	0·60	1·15
*County of Durham	25·7	11·5	85	0·78	1·21

* Administrative County.

† Not available.

TABLE I. OF MINISTRY OF HEALTH.
Vital Statistics of Whole District during 1923 and previous Years.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncor-rected Number	Nett.		Number	Rate.	of Non-resi-dents regis-tered in the District.	of Resi-dents not reg-istered in the District.	Under 1 Year of Age.		At all Ages.	
			Number	Rate.					Number	Rate per 1,000 Nett Births	Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1906	257,113	8,210	..	..	4,831	18·8	..	..	..	..	..	..
1907	259,082	8,093	..	..	4,594	17·7	..	..	..	..	..	..
1908	261,065	8,382	..	..	4,801	18·4	..	..	..	..	..	..
1909	263,064	7,682	..	..	4,459	16·9	..	..	..	..	..	..
1910	265,077	7,543	..	..	4,252	16·0	..	..	..	..	..	..
1911	267,261	7,089	7,082	26·5	4,667	17·5	448	165	973	137	4,384	16·4
1912	269,193	7,219	7,194	26·7	4,221	15·7	529	146	727	101	3,838	14·5
1913	271,295	7,480	7,460	27·5	4,611	17·0	560	141	908	122	4,192	15·5
1914	271,523	7,564	7,538	27·8	5,069	18·7	546	138	1,029	137	4,660	17·2
1915	278,107	7,575	7,545	27·8†	5,257	18·9	693	207	1,007	133	4,771*	17·2*
1916	278,107	7,332	7,248	26·2	4,875	17·5	680	232	899	123	4,427*	15·9*
1917	278,107	6,548	6,495	23·4	4,646	16·7	718	246	732	113	4,174*	15·0*
1918	278,107	6,555	6,468	23·3	5,380	19·3	872	308	692	107	4,816*	17·3*
1919	275,099	6,793	6,674	23·3§	5,358	19·5	737	234	806	120	4,855*	17·6*
1920	286,061	8,433	8,070	28·0‡	4,609	16·1	779	195	817	101	4,025	14·0
1921	278,400	7,720	7,284	26·2	4,602	16·5	817	142	699	96	3,927	14·1
1922	281,600	7,432	6,987	24·8	4,698	16·7	831	145	646	92	4,012	14·2
1923	283,800	6,961	6,367	22·4	4,298	15·1	789	150	623	98	3,659	12·9

Area of District in acres (exclusive of area covered by water) 8,453.

Total population at all ages at census 1921, 278,400.

† In accordance with the instructions of the Supt. of Statistics, General Register Office, Somerset House, this rate is calculated on the population for 1914. * Civilians only.

§ Calculated on a population of 286,571. ‡ Calculated on a population of 287,255.

Corrected Death Rates in different Wards, 1923.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	City.
11·8	* 10·0	15·4	14·1	12·9	14·0	12·6	* 12·7	11·6	9·4	* 17·0	16·1	11·4	8·1	13·3	11·5	13·5	11·6	* 15·1	12·9

* All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

TABLE II. OF MINISTRY OF HEALTH.

(See under **INFECTIOUS DISEASES**, page 89).

TABLE IV. OF MINISTRY OF HEALTH.

See under **INFANTILE MORTALITY** page 62a).

[illegible]

REPORT OF THE
MATERNITY AND CHILD WELFARE
MEDICAL OFFICER.

II.—THE CHILD.

INFANTILE MORTALITY, MATERNITY AND
CHILD WELFARE.

INFANTILE MORTALITY.

SUMMARY OF BIRTHS AND DEATHS, 1923.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the Year ..	3,401	3,236	6,637	183	141	324	6,961
Nett ,, ,, ,, 	3,106	3,017	6,123	132	112	244	6,367
Nett Deaths under 1 year ..	335	266	601	15	7	22	623
Death Rate per 1,000 births	108	88	98	114	62	90	98

BIRTHS (CORRECTED) IN WARDS IN THE DIFFERENT QUARTERS OF THE YEAR 1923.

WARD.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	TOTALS.
St. Nicholas'	28	15	8	8	59
St. Thomas'	51	46	45	43	185
St. John's	123	108	99	103	433
Stephenson	138	120	115	114	487
Armstrong	112	113	96	94	415
Elswick	58	62	65	42	227
Westgate	78	90	86	86	340
Arthur's Hill	19	32	32	32	115
Benwell	114	135	129	98	476
Fenham	60	57	60	59	236
All Saints'	112	106	102	97	417
St. Andrew's	77	101	93	81	352
Jesmond	42	45	28	30	145
Dene	37	32	46	33	148
Heaton	78	57	64	70	269
Byker	113	111	114	99	437
St. Lawrence	155	162	134	135	586
St. Anthony's	133	118	109	93	453
Walker	166	142	137	142	587
CITY	1,694	1,652	1,562	1,459	6,367

DISTRIBUTION OF DEATHS.

WARDS.	Nett Deaths of Children under 1 year of age in 1923.					Children under 1 year of age— Death rate per 1,000 Births.	Birth Rate per 1,000 Popula- tion (cor- rected).
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year.		
St. Nicholas' ..	4	1	..	1	6	102	16.6
St. Thomas' ..	7	3	6	4	20	108	12.6
St. John's	18	17	14	15	64	148	27.3
Stephenson ...	19	17	9	10	55	113	24.6
Armstrong ...	13	21	7	5	46	111	25.4
Elswick	10	1	5	3	19	84	17.5
Westgate	8	6	5	6	25	73	21.3
Arthur's Hill .	2	3	2	1	8	70	11.5
Benwell	18	10	7	10	45	95	23.5
Fenham	7	7	3	5	22	93	19.4
All Saints'	20	9	10	11	50	120	23.2
St. Andrew's .	5	10	2	5	22	62	27.0
Jesmond.....	4	5	1	2	12	83	13.5
Dene	7	2	3	1	13	88	11.5
Heaton	3	3	2	6	14	52	18.2
Byker	21	11	11	6	49	112	24.2
St. Lawrence .	19	20	10	11	60	102	28.8
St. Anthony's .	10	16	10	5	41	91	26.1
Walker	17	18	6	11	52	89	34.6
CITY.....	212	180	113	118	623	98	22.4

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

TABLE IV. OF MINISTRY OF HEALTH.

62A

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 29TH DECEMBER, 1923.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents"
	GROSS.										NETT (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	
I.—GENERAL DISEASES.																					
Measles	1	2	6	22	31	..	..	..	..	..	1	2	6	22	31	9
Scarlet Fever
Whooping Cough	1	1	4	4	12	14	35	..	..	..	1	1	4	4	12	13	34	2
Influenza	1	..	1	..	..	..	..	..	..	..	1	..	1	..
Erysipelas	1	..	1	..	..	..	..	..	..	..	1	..	1	1
Pyæmia, Septicæmia	1	..	1	..	..	..	..	1	..	..	1	..	1	..	..	..	..	1	..
Pulmonary Tuberculosis (not acute).....	1	1	..	..	..	..	..	..	..	..	1	1	..
Acute Miliary Tuberculosis	1	1	..	..	..	..	..	..	..	..	..	..	1
Tuberculous Meningitis	3	6	6	15	..	..	..	..	..	..	2	6	5	13	6
Tuberculosis of Peritoneum and Intestines.....	1	1	..	..	..	..	..	..	..	..	..	..	1
Tuberculosis of other Organs	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1
TOTAL TUBERCULOSIS	4	6	9	19	..	..	..	..	..	..	2	6	6	14	9
Rickets, Softening of Bones	1	1	..	..	..	..	..	..	..	..	1	1	..
Syphilis	4	2	1	..	7	..	..	..	..	..	3	1	1	..	5	4
Other General Diseases	1	1	..	..	2	..	..	..	..	2	1	1	..	..	2	..	..	..	..	2	1
II.—DISEASES OF NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.																					
Cerebro Spinal Fever	1	..	1	..	..	..	..	..	..	..	1	..	1	1
Meningitis, other forms or undefined.....	1	1	6	3	11	..	..	..	..	..	..	1	6	3	10	3
Convulsions with Teething	1	..	3	4	..	..	..	..	..	..	1	..	3	4	..
Other Infantile Convulsions	8	2	1	4	15	3	4	6	1	29	7	2	1	4	14	3	4	6	1	28	4
Other Diseases of the Nervous System	1	..	..	..	1	..	2	..	..	3	1	..	..	..	1	..	2	..	..	3	2
Other Diseases of the Ears	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1
III.—DISEASES OF CIRCULATORY SYSTEM.																					
											Nil.										
IV.—DISEASES OF RESPIRATORY SYSTEM.																					
Diseases of the Larynx	1	..	1	..	..	..	..	..	..	..	..	..	..	1
Bronchitis	1	1	1	3	20	13	6	7	49	..	1	1	1	3	19	13	6	7	48	..
Broncho-pneumonia.....	2	2	..	..	4	16	17	24	25	86	2	2	..	..	4	15	16	21	25	81	14
Lobar Pneumonia	1	1	..	2	..	..	..	3	5	..	1	1	..	2	..	..	..	3	5	2
Pneumonia (type not stated).....	1	1	1	3	6	6	17	..	..	..	1	1	1	3	5	6	16	..
Carried forward.....	12	7	4	7	30	50	54	77	94	305	11	7	4	7	29	46	49	72	90	286	54

TABLE IV. OF MINISTRY OF HEALTH.—Continued.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 29TH DECEMBER, 1923.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NETT (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	
<i>Brought forward</i>	12	7	4	7	30	50	54	77	94	305	11	7	4	7	29	46	49	72	90	286	54
V.—DISEASES OF DIGESTIVE SYSTEM.																					
Inflammation of the Stomach .....	..	..	..	2	2	1	2	1	..	6	..	..	..	2	2	1	2	1	..	6	..
Diarrhoea and Enteritis <i>including</i> Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh .....	..	1	..	3	4	13	24	13	6	60	..	1	..	3	4	13	22	12	6	57	16
Colic	1	..	..	..	1	..	..	1	..	2	1	..	..	..	1	..	..	1	..	2	2
Hernia, Intestinal Obstruction	2	..	..	..	2	1	4	7	1	15	1	..	..	..	1	1	1	2	..	5	13
Other Diseases of the Intestines	1	..	..	..	1	1	..	..	..	2	1	..	..	..	1	1	..	..	..	2	1
VI.—NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																					
Acute Nephritis .....	..	..	..	..	..	1	..	..	1	2	..	..	..	..	..	..	..	..	1	1	2
VII.—DISEASES OF SKIN AND CELLULAR TISSUE.																					
Gangrene .....	..	1	..	..	1	..	..	..	..	1	..	1	..	..	1	..	..	..	..	1	..
Phlegmon, Acute Abscess .....	..	..	..	..	..	1	2	..	..	3	..	..	..	..	..	1	1	..	..	2	2
Diseases of the Integumentary System.....	..	2	..	..	2	..	..	..	..	2	..	1	..	..	1	..	..	..	..	1	2
VIII.—DISEASES OF BONES, &c.																					
Diseases of the Bones .....	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	1	1
IX.—MALFORMATIONS.																					
Congenital Malformations	10	7	2	..	19	8	4	2	1	34	9	5	2	..	16	5	2	..	..	23	18
X.—DISEASES OF EARLY INFANCY.																					
Premature Birth	100	11	8	4	123	14	5	1	..	143	95	10	7	4	116	13	5	1	..	135	34
Infantile Atrophy, Debility, and Marasmus.....	28	8	6	7	49	18	7	2	1	77	27	8	5	8	48	18	6	1	..	73	8
Icterus Neonatorum, Sclerema and Œdema Neonatorum	1	1	..	..	2	1	..	1	..	4	1	1	..	..	2	1	..	1	..	4	..
Other Diseases peculiar to early infancy	22	3	2	..	27	1	..	..	..	28	19	3	1	..	23	1	..	..	..	24	9
XI.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.																					
.....	Nil.																				
TOTAL	177	41	22	23	263	110	102	106	104	685	165	37	19	24	245	101	88	92	97	623	162

ANALYSIS OF INFANTILE MORTALITY SINCE COMMENCEMENT OF ORGANISED MATERNITY AND CHILD WELFARE
WORK BY THE HEALTH DEPARTMENT.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
Death-rate of Infants <i>under 1 year</i> per 1,000 births	177	139	166	155	138	153	126	139	122	123	137	101	122	137	133	123	113	107	120	101	96	92	98
Death-rate of Infants <i>under 3 months</i> per 1,000 births	83.8	74.8	84.9	82.6	71.6	75.6	68.6	76.6	64.8	66.9	71.5	60.3	67.7	70.7	68.2	66.2	58.7	37.7	64.1	62.1	61.0	57.2	54.4
Death-rate of Infants from <i>Premature Birth</i> , per 1,000 births	20.1	20.7	25.1	20.9	19.7	22.0	21.2	24.8	19.8	18.8	21.7	19.3	22.0	19.5	24.0	22.0	22.3	27.4	24.6	20.6	22.2	18.4	21.2
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Premature Birth</i> , plus all <i>Congenital Causes</i> *	40.8	51.7	62.1	60.6	52.1	61.5	43.0	44.6	42.3	42.6	43.9	48.0	57.4	51.1	56.6	51.0	46.0	45.3	51.5	43.1	39.0	34.8	41.5
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Diarrhœa and all other Digestive Diseases</i> †	45.7	12.8	26.9	21.8	22.4	35.2	12.7	24.8	13.5	16.7	25.1	7.8	16.6	25.3	20.1	14.3	14.8	11.9	14.7	14.9	16.0	9.1	11.5
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Infantile Atrophy, Debility and Marasmus</i>	15.8	19.8	30.8	29.2	24.4	31.4	11.1	10.6	14.6	13.5	22.7	21.4	25.6	23.0	25.0	22.4	17.7	13.0	18.0	16.9	13.0	9.4	11.5
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Measles</i> .....	..	..	..	..	..	5.35	2.60	0.60	3.64	2.26	4.95	3.61	2.28	4.65	6.90	2.50	2.46	0.77	3.89	0.99	2.88	0.29	4.87
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Whooping Cough</i> .....	..	..	..	..	..	3.42	7.30	5.73	4.30	5.05	7.35	2.78	5.50	5.20	5.17	4.10	3.70	6.65	0.60	3.1	3.7	1.6	5.3
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Respiratory Diseases</i> .....	..	..	..	..	..	20.8	24.6	27.0	24.4	25.2	26.4	20.4	22.2	30.6	24.9	28.0	27.0	20.9	27.6	26.9	18.7	32.0	23.6
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Tuberculosis</i> (all forms) ....	..	..	..	..	..	3.53	3.71	4.65	4.55	4.25	2.40	3.20	3.88	3.88	3.40	2.60	1.54	2.63	1.80	1.36	1.51	1.29	2.2

For particulars of deaths, as to causes, etc., see Tables on pages 56A and 60A.

DEATHS OF CHILDREN UNDER SCHOOL AGE.

The mortality rate among children, aged 1 to 5 years, in 1923, per 1,000 births in the years 1919 to 1922 (inclusive) was 13.7. The corresponding figure for each of the previous four years was as follows:—1922, 13.8; 1921, 15.0; 1920, 12.4; 1919, 20.2.

Prior to 1911 figures uncorrected for cases belonging to other districts.

*“ *All Congenital Causes* ” includes Syphilis and congenital defects.

†“ *Diarrhœa and all other Digestive Diseases* ” includes Diarrhœa, Dysentery, Epidemic or Zymotic Enteritis, Rickets, Diseases of the Stomach, Enteritis, Obstruction of Intestine, Peritonitis and other Diseases of the Digestive System.

DEATH RATE PER 1,000 POPULATION FROM “ THE PUERPERAL STATE.”

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
Population	217,862	255,160	257,113	259,082	261,065	263,064	265,077	267,261	269,193	271,295	271,523	278,107	278,107	278,107	278,107	275,009	286,061	278,400	281,600	283,800
Deaths ...	30	23	19	16	27	27	24	29	29	23	22	28	37	18	21	29	27	24	28	26
Rate	0.14	0.09	0.07	0.06	0.13	0.12	0.09	0.19	0.17	0.13	0.08	0.10	0.13	0.06	0.08	0.10	0.09	0.09	0.10	0.09

Report of the Maternity and Child Welfare Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

Sir,

General.

The most serious feature of the year 1923 from a child welfare point of view in Newcastle was the almost continuous presence in the City throughout the whole year of one or more of those infectious diseases which are peculiar to—and so devastating in their effects upon—children of all ages. Measles, whooping cough and chicken pox were constantly with us, and all took their toll, either in young lives or in temporary or permanent disablement. This is regrettable, but when we recall the fact that a large proportion of our citizens are living under grossly over-crowded conditions, it can hardly be surprising, for it is impossible to avoid contiguity in those instances—all too numerous in our midst—where families of four or more individuals, and containing two or more children, are dwelling together in one or two rooms. Infectious diseases under these circumstances have freater freedom for spreading than they would have under happier housing conditions, and they appear to have taken full advantage of them in the year under review. Every effort was made to stem this evil tide and to limit its bad effects, and to this end the activities of all the Health Visitors was focussed on infectious diseases, and the ordinary birth visiting remained partially and temporarily in abeyance. Thus, of the 6,875 cases of measles notified during the year (compared with 542:

in 1922) 6,266 were visited and re-visited by the Health Visiting staff, and there can be little doubt that had it not been for this care the effects would have been much more serious than they were. At all the centres educational propaganda was carried on, and mothers were cautioned against the dangerous custom—mostly of bygone days, but still prevailing here and there—of putting healthy members of a family in contact with an infectious member, so that the whole family could enjoy the disease in harmony, and so get it over and done with. There is good evidence that the public is treating measles with much greater respect than was customary a few years ago; but whooping cough is still regarded by many people as “only whooping cough,” and children are still allowed perfect freedom when they ought to be strictly isolated. Again, at the Centres mothers are being taught the fact that whooping cough is a highly infectious and dangerous disease, and that they must regard it accordingly. There were 78 deaths from this disease in the City during the year.

From an opposite point of view it is gratifying to report that among children there was a satisfactory fall in the number of deaths attributed to influenza and pneumonia—210, as compared with 355 in 1922. Indeed, from a children's respiratory diseases point of view, 1923 must be considered a comparatively good year—the infantile deaths from these causes having fallen 74 below the previous year. The doctrine of the value of fresh air is preached assiduously, and mothers are daily urged to get their children out of doors, and preferably into open spaces, as much as possible. People living in the West End of the City are more fortunate in this respect than those living in the East End, in that the former have a park for their children to play in. A park

or a large open playground in the centre of the Byker district of the City is badly needed, and would confer inestimable pleasure and benefit on thousands of little ones who now have nowhere to play excepting in the crowded and dangerous streets.

Births.

There were 620 fewer births registered in the City in 1923 than there were in 1922—a fall equivalent to 8·9 per cent., and there can be little doubt in the minds of all who come daily into contact with women of child bearing age that a great deal of this fall is intentional, and due to the obvious causes of (a) industrial distress and (b) shortage of houses ; and of the two the latter cause may be the chief. No nation can regard a fall of nearly ten per cent. in the birth rate of one of its chief industrial cities with equanimity, and it is to be hoped that for this and many other reasons the great and numerous obstacles which at present prevent the satisfactory housing of the populace will soon be removed.

Infantile Deaths.

There is an increase in the infantile death rate over the previous year—98, as compared with 92. This is accounted for by the presence of infectious diseases to which attention has been already drawn. Thus the deaths from measles and whooping cough together increased the infantile death rate by 8·3 per 1,000 births. But in spite of this the actual number of deaths of infants was 23 less in 1923 than it was in the previous year, though the number of births being relatively lower than last year, the mortality rate is higher.

Sex Infant Mortality.—Of the 6,367 children who were born in the City during the year 3,238 were boys and 3,129 were girls : that is there were 109 more boys than girls. In a previous report attention was drawn to the fact that although each year sees an excess of male births over female births, it also sees an excess of male infant deaths, which, unfortunately, is out of proportion to the birth excess ; and 1923 was no exception to the rule. Thus 350 boys (or 108 per thousand of those born) died during their first year, compared with 273 girls (or 87·2 per thousand births).

Welfare Centres.

During the year new Centres were established in the Walker and Scotswood districts of the City, and extra medical sessions were added to those held at Benwell, Portland Street and City Road. At both the new Centres the opening was an official and ceremonial one, and was performed by Councillor John Chapman, J.P., with Dr. Simpson (Chairman of the Health Committee) in the chair at Scotswood ; and by Councillor David Adams, J.P., who was then Sheriff, and Member of Parliament for the West End of the City, at Walker. In both cases the chief speakers were supported by other prominent members of the Council and by Mrs. Brackenbury, who occupies the Vice-Chair of the Maternity and Child Welfare Committee. It is gratifying to note that from the outset these two new Centres have been well attended, and with the nine previously existing, the City now possesses eleven Child Welfare Centres, so situated as to be convenient for residents in every district.

Towards the close of the year the Centre held for many years at Barrack Road was transferred to its new home in Diana Street, where premises at once more commodious and convenient in every way were found in an old and disused City School. After alterations and adjustments had been made to the building it became an excellent Centre, and inasmuch as it is the only one of the eleven Centre buildings which belongs to the Council—the others all being rented—it must be regarded as our chief Centre. Again the opening was a ceremonial occasion, the chief speaker being Councillor Mary Laverick.

Centre Attendances.—Each year it has been thought that the limit—so far as the number of attendances at the Centres was concerned—had been reached, but each year continues to show an excess over its predecessor.

In 1923 the attendances numbered 42,515, which is an increase of 6,495 over the figure for 1922.

These attendances were made by 5,155 individual children, of whom 2,740 were boys and 2,415 were girls, and 1,627 of the total were children of twelve months or over: that is, children who are commonly referred to as “toddlers,” and who very frequently show marked deterioration compared with the infant stage. This deterioration is almost entirely due to an insufficient or unsuitable diet, and constant and patient efforts are necessary in instructing mothers on this topic.

It is perfectly easy to tell a mother the details of a diet considered suitable for her particular child, but unfortunately the matter does not end there, for the mother may be so poor as not to be able to buy what are among the cheapest of foods, or being able to buy them, she may not have the facilities for cooking them.

It is not generally realised that many families are compelled to do all their cooking on an open sitting room fire, so that their diet is restricted to those substances that can be eaten boiled or stewed or fried. Thus, such a mother is prevented from giving her child a milk pudding cooked, as it usually is, in an oven, and so the child misses something that is undoubtedly attractive, viz., the brown top.

Attendances at Maternity and Child Welfare Centres.

YEAR.	No. of Attendances.	No. of Individuals.	Average Attendance. per Individual.	Average Attendance at each Session.
1918	4,813	..	..	..
1919	8,383	..	..	..
1920	22,596	3,751	6·0	44·2
1921	32,538	4,734	6·8	40·7
1922	36,020	4,835	7·4	44·9
1923	42,515	5,153	8·2	46·5

Ante-Natal Centres.—These continue to be well attended, and much valuable work has been done during the year. But the facilities at present existing are far too few, and it is hoped that in the near future it will be possible to extend them. This is not work that can in any way be hurried; the thorough examination of an expectant mother with the necessary recording of conditions found, takes time, and it must be considered satisfactory that at the only two existing Ante-Natal Clinics under the Corporation scheme, 281 mothers were examined and advised during the year. Additional centres for this work are required at Walker and Scotswood.

Sewing and Knitting Classes.

Each Centre in the City has its one or more days every week which are set apart for the instruction of mothers in these useful arts, and the resulting benefit is substantial.

One or other of the four professional teachers attends her particular Centre regularly, and at Shieldfield Centre the class is voluntarily taken by Mrs. Holmes, to whose kindness and self-sacrifice it is a pleasure to pay tribute.

Voluntary Workers.

One or more lady voluntary workers are now attached to each Centre, and all have given most freely of their services throughout the year. One cannot speak too highly of the value of such aid.

Maternity Hospital.

The New Maternity Hospital in Jubilee Road was opened by Her Royal Highness Princess Mary, who graciously permitted her name to be given to the Hospital, in November, and with the alterations, additions and improvements made it gives the City the privilege of possessing one of the largest and best hospitals of its kind in the kingdom. When complete, the hospital will be unique in that it will not only deal with maternity from its earliest days to its natural end, but will also provide facilities for dealing with one of our problems., i.e., the wasting infant, and will give complete and modern accommodation for a Child Welfare Centre. The cordial relations which have always existed between the Hospital Staff and that of

our Maternity and Child Welfare Section continue, and have been cemented still closer during the year by the appointment of the writer to the Staff of the Hospital as Maternity and Child Welfare Physician. All cases recommended by the Health Department during the year—and they have been numerous—have been readily admitted or given outdoor treatment as circumstances required.

Lectures.

Various lectures or papers relating in some way to Maternity and Child Welfare have been given during the year, the most important probably being that at Diana Street Centre to a large class of Medical Students from the College of Medicine.

Dried Milk.

Every care was taken to prevent the improper use of this milk, and it was only given to mothers who for some reason were unable to nourish their children naturally, or for use at or after weaning time.

The following table shews the quantity of dried milk distributed each month during the year :—

MONTH.	FREE. lbs.	AT COST PRICE. lbs.
January	2,094	2,351
February	2,333	2,233
March	2,623	3,066
April	2,014	2,000
May	1,983	2,368
June	2,968	2,859
July	1,841	2,528
August	2,339	2,434
September	3,724	3,889
October	3,617	3,041
November.....	3,452	3,141
December	4,983	4,053
	33,971	33,963

Number of children attending Centres :—5,155.

Number of children who were given free milk :—
1,429 or 28 per cent. of those who attended the Centres.

Number of children who received orders for milk at
cost price :—968, or 18 per cent.

Of the total amount given free :—

33,696 lbs. were given to children.

275 lbs. were given to expectant mothers.

Number of expectant mothers who attended Ante-
or Post-Natal Clinics :—360.

Number of above who received free milk :—91, or
26 per cent.

52 per cent. of individuals attending Centres did
not receive milk orders either free or at cost price.

MATERNITY AND CHILD WELFARE CENTRES, 1923.

MONTH.	Ante-Natal Sessions.		Ante-Natal.		Post-Natal.		New Babies.			Individuals.			Attendances.			Medical Sessions.		Non-Medical Sessions.		Attendances at Sessions.	
	Attendances.	Individuals.	Attendances.	Individuals.	Under 12 months.	Over 12 months.	Total.	Under 12 months.	Over 12 months.	Total.	Under 12 months.	Over 12 months.	Total.	Number.	Average Attendance.	Number.	Average Attendance.	Number.	Average Attendance.	Medical.	Non-Medical.
January ...	8	46	41	5	7	220	28	248	1007	505	1512	2058	840	2898	52	50.6	11	23.8	2636	262	
February ..	8	41	36	11	13	178	35	213	984	516	1500	1997	912	2909	56	46.6	12	24.8	2611	298	
March	9	56	38	22	24	199	34	233	1013	552	1565	2518	1195	3713	46	51.4	35	38.4	2368	1345	
April	7	53	42	20	20	178	24	202	956	521	1477	1908	947	2855	34	55.7	27	35.4	1897	958	
May	7	36	30	8	9	177	22	199	933	509	1442	1873	908	2781	34	55.2	27	33.3	1880	901	
June	8	40	35	10	11	260	47	307	1101	604	1705	2281	1133	3414	61	45.0	15	44.2	2751	663	
July	6	37	26	5	5	221	41	262	993	566	1559	1777	899	2676	38	44.3	25	39.6	1684	992	
August	8	45	28	14	16	212	60	272	1041	618	1659	2241	1098	3339	51	42.3	29	40.7	2158	1181	
September .	10	76	56	19	20	322	77	399	1275	797	2072	3453	1837	5290	105	50.3	..	..	5290	..
October ...	8	64	44	5	5	241	39	280	1266	753	2019	2907	1539	4446	84	52.9	..	..	4446	..
November .	8	64	45	6	8	206	46	252	1250	740	1990	2699	1432	4131	84	49.1	..	..	4131	..
December ..	8	60	42	5	5	173	30	203	1150	729	1879	2552	1511	4063	88	46.1	..	..	4063	..
Total ..	95	618	281	79	143	2587	483	3070	3528	1627	5155	28264	14251	42515	733	49.0	181	36.5	35915	6600	

MATERNITY AND CHILD WELFARE CENTRES, 1923.

CENTRE.	Ante-Natal.		Post-Natal.		New Babies.			Individuals.			Attendances.			Medical Sessions.		Non-Medical Sessions.		Attendances at Sessions.		Deaths.	Illegitimate Children.
	Attendances.	Individuals.	Attendances.	Individuals.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Number.	Average Attendance.	Number.	Average Attendance.	Medical.	Non-Medical.					
Benwell .....	..	..	..	..	331	71	402	443	207	650	3379	1362	4741	69	58.2	23	31.5	4016	725	18	10
Byker.....	256	120	83	49	396	67	463	507	184	691	3905	1968	5873	74	65.9	18	55.2	4879	994	24	18
City Road .....	..	..	..	..	201	45	246	292	131	423	2304	1261	3565	72	41.8	26	21.2	3012	553	15	17
Diana Street ..	..	..	..	..	278	34	312	391	162	553	2868	1433	4301	73	48.3	20	38.7	3527	774	20	14
Portland Street	..	..	..	..	258	39	297	373	192	565	3228	1306	4534	69	52.9	28	31.5	3651	883	17	16
Scotswood .....	..	..	..	..	100	49	149	129	101	230	1075	614	1689	47	33.0	5	27.0	1554	135	2	9
Shieldfield .....	..	..	..	..	226	26	252	318	129	447	2991	1519	4510	75	47.4	22	43.1	3561	949	12	11
Spital Tongues	..	..	..	..	56	6	62	89	66	155	862	429	1291	47	27.4	..	..	1291	..	2	1
St. Peter's.....	..	..	..	..	306	45	351	389	183	572	3114	2098	5212	73	58.5	23	40.7	4274	938	24	15
Walker .....	..	..	..	..	193	51	244	246	119	365	1605	791	2396	46	47.0	6	38.3	2166	230	4	4
Wharncliffe St.	362	161	60	30	242	50	292	351	153	504	2933	1470	4403	88	45.2	10	41.9	3984	419	24	24
Total ..	618	281	143	79	2587	483	3070	3528	1627	5155	28264	14251	42515	733	49.0	181	36.5	35915	6600	162	139

SUMMARY OF CENTRE REPORT, 1923.

<i>Total Sessions</i>	914	Average attendance at each....	46·5
<i>Total Medical Sessions</i>	733	Average attendance at each....	49·0
<i>Total Non-Medical Sessions</i>	181	Average attendance at each	36·5
<i>Total Individuals</i>	5,155	Average visits per individual....	8·2
<i>Total Ante-Natal and Post-Natal Sessions</i>	95	Average attendance at each	8·01
<i>Total Ante-Natal and Post-Natal Individuals</i>	360	Average visits per individual....	2·1
<i>Byker Ante-Natal Sessions</i>	48	Average attendance, 7·06 ; average visits per individual	2·0
<i>Wharncliffe St. Ante-Natal Sessions</i>	47	Average attendance, 8·97 ; average visits per individual	2·2

SEWING AND KNITTING CLASSES, 1923.

CENTRE.	SUBJECT.	TEACHER.	DAY.	Attend- ance.	Sessions.	Average.
Benwell	Sewing and Knitting	Miss Crawford	Thursday	412	48	8.5
*Byker	Sewing and Knitting	Miss Whipp	Tuesday	243	23	10.5
Byker	Sewing and Knitting	Miss Whipp	Friday	665	48	13.8
City Road.....	Knitting	Miss Whipp	Wednesday.....	728	49	14.8
City Road.....	Sewing	Miss Stokoe	Thursday	369	48	7.6
Diana Street	Sewing	Miss Stokoe	Wednesday.....	478	47	10.1
Diana Street	Knitting	Miss Whipp	Thursday	542	47	11.5
Portland Street ...	Sewing and Knitting	Miss Robson.....	Tuesday	607	43	14.1
†Scotswood	Sewing and Knitting	Miss Whipp	Tuesday	259	24	10.7
Shieldfield.....	Sewing	Mrs. A. Holmes	Tuesday	268	46	5.8
Spital Tongues.....	Sewing	Miss Stokoe	Monday.....	380	45	8.4
St. Peter's	Sewing	Miss Robson.....	Wednesday.....	371	48	7.7
St. Peter's	Knitting	Miss Crawford	Wednesday.....	481	46	10.4
†Walker	Knitting	Miss Crawford	Friday	236	24	9.8
Wharnccliffe Street .	Sewing and Knitting	Miss Crawford	Tuesday	374	47	7.9
*Wharnccliffe Street .	Sewing and Knitting	Miss Crawford	Wednesday.....	182	25	7.2

* January to June.

† June to December.

Notification of Births Acts.

Of the 6,961 births (gross) which were registered in the City in 1923, 5,061, or 72·7 per cent. were notified as follows :—

Notified by.	Living Births.		Still-Births.
Medical Practitioners	1203	..	35
Midwives	1764	..	37
Maternity Hospital	1802	..	70
Wingrove Hospital	105	..	8
Gables Maternity Home	137	..	2
Parents	50	..	..
	<hr/> 5,061 <hr/>		<hr/> 152 <hr/>

Still-Births.—Of the total notifications of births received, still-births were in the following proportion :—

Year.	Percentage.	Year.	Percentage.
1918	3·3	1921.....	2·9
1919	3·5	1922.....	3·0
1920	3·0	1923.....	3·0

The number of still-birth burials reported from the Superintendents of Cemeteries was 53, and the number of still-births notified was 152.

Details of 135 of the above still-births which were visited by members of the staff :—

Duration of Pregnancy.—At or under 7 months, 26, or 20% ; at or under 8 months, 22, or 16% ; at full time, 87, or 64%.

Suggested causes of the above still-births :—

	Cases.
(a) Ill-health of the mother	41
(b) Foetal deformities	20
(c) Premature delivery	11
(d) Other causes	63

The following table shows the position in the family of the still-born child :—

	Cases.		Cases.
1st child	34	4th child	12
2nd child	25	5th child	11
3rd child	21	6th child	32

In 93 cases it was the first still-birth, in 25 the second, in 8 the third, and in 9 cases there were more than three previously still-born.

Syphilis was returned as a cause of death in 5 children below the age of 1 year, and the following table gives the ages at deaths and a comparison with previous years :—

AGES.	1923	1922	1921
Under one week .....	..	3	3
One week and under two weeks .....	..	1	1
Two weeks and under three weeks .....	..	..	1
Three weeks and under four weeks .....	..	2	..
One month and under three months	3	2	1
Three months and under six months	1	1	2
Six months and under nine months	1	..	2
Nine months and under 12 months .....	..	..	1
	5	9	11

Health Visitors.—During the first five months of the year there were 12, and during the last seven months 14 Health Visitors, including the Chief Health Visitor, engaged solely in Maternity and Child Welfare Work.

5,639 births were visited, and 16,585 re-visits were paid, an average of nearly 4 visits per child. These give a total of 22,224 visits to children under 1 year.

In addition, 482 visits were paid to children over 1 year and under 5 years; 428 visits to expectant mothers; 37 visits to cases reported from the Royal Victoria Infirmary; and 1,213 special visits; in all, a total of 24,384 visits.

The Health Visitors also paid 6,266 primary and 5,864 subsequent visits to measles cases; 701 primary and 674 subsequent visits to pneumonia cases; 58 primary and 122 subsequent visits to diarrhoea cases; making in all a total of 13,685 visits to infectious cases, and a grand total of 38,069 visits.

The addresses of 106 children who left the City were sent to the Medical Officers of Health for the districts to which they had gone to reside.

Summary of Infants on Visiting List:—

Of 5,957 children born in the City in 1922, 4,804 completed their first year in 1923, and of the remainder:

532 died.

300 left the City.

285 disappeared and could not be traced.

36 were visited only once.

The following figures are therefore based on the 4,804 who completed the first year, *plus* the 532 who died, making in all a total of 5,336.

Influence of Housing Conditions.

During the 16 years, 1908—1923, 55,421 births have been under the supervision of the Health Visitors, and of these 6,566 died. The following table shows the numbers of births and deaths in the various classes of house:—

YEAR.	HOUSES OF							
	1 Room.		2 Rooms.		3 Rooms.		4 Rooms or more.	
	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths
1908.....	247	32	515	57	312	32	13	2
1909.....	339	53	694	86	168	32	29	3
1910.....	536	62	723	68	51	4	7	2
1911.....	462	68	794	79	77	6	20	1
1912.....	465	48	746	60	110	6	25	1
1913.....	241	40	348	28	91	3	17	3
1914.....	245	36	375	31	90	11	25	3
1915.....	631	104	2,140	306	1,416	144	692	74
1916.....	611	121	2,333	343	1,584	180	756	85
1917.....	730	104	2,199	284	1,349	150	776	84
1918.....	607	90	2,018	270	1,285	144	766	83
1919.....	664	111	2,056	306	1,358	188	810	102
1920.....	843	167	2,155	291	1,529	171	1,052	121
1921.....	1,263	140	2,523	234	1,651	134	1,036	88
1922.....	1,223	159	2,267	241	1,342	97	655	61
1923.....	1,357	149	2,187	243	1,155	86	637	54
16 years ..	10,464	1,484	24,073	2,927	13,568	1,388	7,316	767
Death rate per 1,000 births		141·8		121·6		102·3		104·7

The mortality per 1,000 births in 1923 was as follows :—

1 roomed dwellings	110
2 roomed dwellings	111
3 roomed dwellings	74
Dwellings over 3 rooms	85

Deaths of Children.—532 children died during the first year of their life, and of these 251, or 47·1 per cent. died within the first month. The cause of death in 198, or 79 per cent. of these latter cases was given as “prematurity,” or “debility from birth.”

Of the total deaths under 1 year of age visited :—

142, or 26·6%, were due to bronchitis or pneumonia.

50, or 9·4%, were due to convulsions.

56, or 10·5%, were due to enteritis.

Previous deaths in families where a baby died during 1923.—In 77·8% of the cases this was the first death; in 7·2% of the cases this was the second death; in 7·5% of the cases this was the third death; and in 7·5% of the cases more than three children had previously died.

Attendant at time of birth of the 532 children who died :—Doctors, 40%; Midwives, 24%; Maternity Hospital, 36%.

Feeding of the 5,336 children under supervision :—

	Breast.	Mixed.	Artificial.
Children who <i>survived</i> first year; feeding during first month	94·5%	2%	3·5%
Children who <i>died</i> during first year; feeding during first month.....	82%	7%	11%
Children who <i>survived</i> first year; feeding at nine months	73%	9·5%	17·5%
Children who <i>died</i> during first year; feeding at time of death	70%	7%	23%
Feeding of 56 children who died from enteritis	43%	9%	48%

Illegitimacy.—244 illegitimate children were born; of these 22 died, a death-rate of 90 per 1,000, as compared with 98 for all births.

Sex.—3,238 male children were born, and 350 died, 3,129 female children were born, and 273 of these died, in the proportions 108 per 1,000 male, and 87·2 per 1,000 female.

MIDWIVES ACTS, 1902 and 1918.

During the year 38 midwives notified the Local Supervising Authority of their intention to practise in the City, and of these 31 held the examination certificate of the Central Midwives Board, and seven were registered as having been in *bona fide* practise before the passing of the Midwives Act. There was a total increase of four midwives during 1923.

Inspections—205 visits were paid by the Superintendent of Midwives to the homes of certified midwives for the purpose of inspecting midwifery bags and appliances, to ascertain that the necessary records of their work were being satisfactorily kept, and to investigate cases of ophthalmia neonatorum, septicæmia, or other abnormalities occurring in their practices. In addition, 148 visits were paid to midwives' cases on account of some abnormal condition. The results of these inspections were generally satisfactory.

The clothing and appliances of one midwife were disinfected after being in contact with a patient suffering from puerperal septicæmia.

Five handy-women were interviewed as to conduct and on investigation it was found that they had acted in emergencies.

Births attended by Midwives.—1,764 living births and 37 still-births were attended by midwives during the year; these figures show a decrease of 202 in the former and of 2 in the latter. Midwives attended 27 per cent. of the total births in the City, as compared with 26 per cent in 1922, and 28 per cent. in 1921.

Lectures to Midwives.—Fortnightly meetings of midwives practising in the City were held in the Health Department. Discussions took place and midwives were kept up to date with regard to new requirements and with general progress. The closest co-operation and loyalty exists between the midwives practising in the City and the staff of the Health Department, and midwives are encouraged to send their cases to the Ante-

Natal clinics. Much benefit was derived by those mothers who were sent, as well as by the midwife concerned.

Notices for Medical help sent to Local Authority by the Midwives :—

FOR THE MOTHER.		<i>During Puerperium—</i>	
<i>During Pregnancy—</i>		Rise of Temperature.....	6
Ante Partum Hæmorrhage ...	4	Fits	4
Abortions	2	Undefined Illness of Mother ..	8
	<hr/> 6		<hr/> 18
		Total calls for mother	115
			<hr/>
<i>During Labour—</i>		FOR CHILD.	
Uterine Inertia	40	Prematurity	29
Malpresentations	9	Discharging Eyes	18
Contracted Pelvis	6	Cyanosis	2
Retained Placenta	7	Congenital Defects	3
Placenta Prævia	1	Convulsions, etc.	4
Post Partum Hæmorrhage ...	4		<hr/> 56
Ruptured Perineum	24	Total calls for mother and child	171
	<hr/> 91		<hr/>

In 9 per cent. of the midwives' cases the services of a doctor were requisitioned.

Claims from Doctors for Fees in respect to calls from Midwives, viz. :—

	Cases.
For forceps delivery.....	51
For post partum hæmorrhage	3
For illness of mother	21
For illness of child	14
For premature birth	5
For discharging eyes	12
	<hr/>
Total cases	106
	<hr/>

In 1922 the total number of claims under this heading was 77.

Fourteen claims for *payment of midwives' fees* were received.

Ophthalmia Neonatorum.—The number of cases notified was 70, of which 64, or 91 per cent. were visited, the remainder being cases occurring in Hospital, or admitted to Hospital from outside areas. This number shows an increase of 1 on last year's figures, and a decrease of 25 on those of 1921. The confinements were attended by

Doctors	43
Midwives.....	14
Maternity Hospital.....	9
Wingrove Hospital	3
Uncertified Woman	1
	—
	70
	—

369 visits were paid to the above 64 cases, and the ultimate results were :—

Recovered completely	55
Slightly defective in one eye	7
Died	1
Left City before complete recovery.....	1

The *ophthalmia incidence* per 1,000 births for the last five years has been as follows :—

1919	15·0
1920	14·4
1921	13·0
1922	9·9
1923	11·0

Puerperal Septicæmia.—21 cases of this disease were notified during the year, eight of which occurred outside the City area, and were admitted to Hospital in the

City. Of the remaining 13 the following table shows the attendance at birth :—

Doctors.....	10
Midwives	1
Maternity Hospital Staff	2

Thirteen of the cases were visited, and of these four recovered and nine died.

Deaths during the Puerperal Period.—During the year 26 deaths occurred in the City during the puerperal period, and the following table gives the causes and a comparison with the two previous years :—

CAUSES.	1923	1922	1921
Abortions	3	4	..
Accidents of Pregnancy .....	..	1	..
Puerperal Hæmorrhage.....	5	7	6
Other Accidents of Child-birth	1	3	3
Puerperal Fever	10	7	5
Puerperal Albuminuria and Convulsions	5	4	5
Puerperal Insanity .....	..	1	1
Embolism and Sudden Death .....	..	1	..
Puerperal Phlegmasia	2	..	..
	26	28	20

I am, Sir,

Your obedient servant,

A. F. G. SPINKS, M.D.,

Maternity and Child Welfare Medical Officer.

Health Department,

Town Hall,

Newcastle-upon-Tyne,

31st May, 1924.

INCLUDING REPORTS OF THE
RESIDENT MEDICAL OFFICER OF THE
INFECTIOUS DISEASES HOSPITAL
AND THE BACTERIOLOGIST.

III.—INFECTIOUS DISEASE.

FEVERS, FOOD POISONING,
CITY HOSPITAL FOR INFECTIOUS DISEASES,
DISINFECTION, BACTERIOLOGY.

INFECTIOUS DISEASES.

NUMBER OF CASES PER 1,000 POPULATION IN 1923.

DISTRICT.	ATTACK-RATE PER 1,000 POPULATION.						
	Small-pox.	Typhus	Scarlet Fever.	Diphtheria.	Enteric Fever and Continued Fever.	Puerperal Fever.	Erysipelas.
England and Wales	0·06	0·00	2·23	1·04	0·08	0·06	0·32
NEWCASTLE-UPON-TYNE ..	..	..	1·73	0·70	0·02	0·05	0·46
Hull .....	..	..	1·05	0·08	0·01	0·03	0·01
Leeds .....	..	..	4·54	0·78	0·02	0·11	0·44
Bradford .....	..	..	2·28	0·91	0·09	0·10	0·71
Sheffield.....	0·006	..	2·84	0·96	0·08	0·15	0·48
Manchester .....	..	..	2·42	0·72	0·07	0·17	0·39
Salford .....	..	..	3·8	1·3	0·1	0·09	0·4
Liverpool.....	..	..	2·8	1·2	0·02	0·05	0·48
Nottingham .....	..	..	2·59	0·75	0·05	0·03	0·35
Leicester .....	..	..	2·40	0·59	0·025	0·029	0·36
Stoke-on-Trent .....	..	..	4·97	0·88	0·07	0·10	0·68
Birmingham	0·00	..	2·81	1·65	0·03	0·20	0·47
Cardiff	0·03	..	1·54	0·98	0·01	0·13	0·41
Bristol .....	..	*0·002	3·74	1·91	0·08	0·06	0·37
Portsmouth.....	..	..	3·07	3·00	0·18	0·03	0·31
†London	0·00	..	2·21	2·26	0·07	‡3·84	0·40
Gateshead	0·05	..	2·05	0·87	0·01	0·03	0·26
South Shields .....	..	..	2·92	0·62	0·07	0·02	0·23
Tynemouth	0·04	..	1·53	0·47	0·18	0·15	0·13
Sunderland .....	..	..	1·98	0·41	0·07	0·05	0·58
Middlesbrough	0·78	..	8·55	0·59	0·03	0·01	0·69
†Northumberland	0·017	..	3·08	0·57	0·078	0·039	0·42
†Durham	0·04	..	3·90	0·77	0·06	0·02	0·36

† Administrative County. * Port case. ‡ Per 1,000 births.

DEATHS (CORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES
AND NON-NOTIFIABLE ZYMOTIC DISEASES, EXCLUSIVE OF TUBERCULOSIS

WARD.	Diph- theria.	Ery- sipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Cere- bro- Spinal Fever.	Enceph- alitis. Lethar- gica.	Polio- myelitis	Measles.	Puer- peral fever.	Small- pox.	Whoop- ing Cough.	Zy- motic Diarr- hoea (under 2 years of age).	Chicken Pox.
St. Nicholas'	..	..	..	..	..	..	..	..	1	..	..	1	..	..
*St. Thomas'	..	..	..	..	1	..	..	..	6	..	..	3	6	..
St. John's	..	..	..	..	..	..	..	..	9	..	..	3	10	..
Stephenson	1	..	..	..	..	..	..	..	11	1	..	6	4	..
Armstrong	..	1	..	..	..	2	..	..	8	1	..	9	2	..
Elswick	1	..	..	..	..	..	..	..	2	..	..	3	2	..
Westgate	1	..	..	..	..	..	..	..	7	..	..	4	2	..
†Arthur's Hill	..	1	..	..	..	..	1	..	..	..	..	..	1	..
Benwell	4	1	..	..	..	1	..	..	3	..	..	8	2	..
Fenham	..	1	1	..	..	..	1	..	2	..	..	..	4	..
All Saints'	1	2	..	..	..	1	1	..	..	..	..	..	2	..
St. Andrew's	..	..	1	..	..	..	..	..	11	1	..	9	10	..
Jesmond	..	..	1	..	..	..	..	..	18	..	..	4	4	..
Dene	..	..	1	..	..	..	..	..	1	..	..	1	..	..
Heaton	..	..	..	..	..	..	..	..	..	..	..	1	1	..
Byker	..	..	1	..	..	..	..	..	2	..	..	2	2	..
St. Lawrence	1	1	1	..	..	2	..	..	7	2	..	4	5	..
St. Anthony's	..	..	..	..	..	1	..	..	23	2	..	6	9	..
†Walker	1	..	..	..	..	..	1	..	20	3	..	6	6	..
CITY	10	6	5	..	1	7	§3	..	152	10	..	78	79	..

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children.

† Includes Poor Law Institution and Wingrove Hospital.

‡ Includes City Hospital for Infectious Diseases.

§ Includes one death of a patient notified in 1922.

For particulars of deaths from **TUBERCULOSIS** see pages 58A and 130 to 136.

NOTIFIED CASES OF INFECTIOUS DISEASE,

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1923.
(TABLE II. OF MINISTRY OF HEALTH.)

NOTIFIABLE DISEASE.	AT AGES—YEARS.								GROSS TOTAL (ALL AGES).		Net Cases.
	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and up-wards.	Ages not known	1923.	1922.	1923.
Diphtheria (including Membranous Croup)	8	65	96	24	8	2	..	1	204	254	200
Erysipelas	1	4	10	14	48	45	8	4	134	159	131
Scarlet Fever	4	135	279	55	18	..	..	5	496	663	492
Typhus Fever ...	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever .....	..	..	2	3	1	1	..	..	7	19	7
Cerebro-Spinal Fever	1	1	4	1	..	..	..	..	7	4	7
Acute Poliomyelitis	1	1	..	..	..	..	..	..	2	1	2
Acute Polio-Encephalitis ...	..	..	..	..	..	..	..	..	..	1	..
Encephalitis Lethargica .....	..	1	..	..	..	..	1	2	4	4	2
Measles and Rubella	508	4275	2045	26	12	3	..	6	6875	542	6875
Puerperal Fever ..	..	..	..	5	16	..	..	..	21	19	13
Ophthalmia Neonatorum ...	71	..	..	..	..	..	..	..	71	69	70
Pneumonia	142	330	124	73	96	56	22	..	843	1176	843
Malaria .....	..	..	..	..	1	..	..	..	1	5	..
Dysentery .....	..	..	..	..	1	1	..	..	2	4	2
Trench Fever .....	..	..	..	..	..	..	..	..	..	..	..
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..
*Chicken Pox	60	397	396	19	6	1	2	22	903	..	903
TOTALS	796	5209	2956	220	207	109	33	40	9570	2920	9547

WARD DISTRIBUTION OF INFECTIOUS DISEASES (NET).

(TABLE II. OF MINISTRY OF HEALTH.)

WARD.	Diphtheria.	Erysipelas.	Enteric Fever.	Scarlet Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Acute Polio-Encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Malaria.	Dysentery.	*Chicken Pox.	TOTAL.
St. Nicholas' .....	..	2	..	4	..	..	..	..	68	1	..	1	7	..	..	..	8	91
St. Thomas'	1	6	3	13	..	..	..	..	234	1	..	4	24	..	..	..	39	325
St. John's	7	9	2	13	..	..	..	..	471	4	2	7	72	..	..	..	36	623
Stephenson	9	10	..	20	..	..	..	..	602	3	2	6	56	..	..	..	87	795
Armstrong	11	6	..	34	2	..	..	..	421	..	3	16	49	1	..	..	58	601
Elswick	10	6	..	18	..	..	..	..	245	1	1	4	20	1	..	..	41	347
Westgate	6	3	..	28	..	..	..	..	519	3	..	2	33	1	..	..	61	656
Arthur's Hill	4	6	..	7	..	..	..	1	160	16	..	4	34	..	..	..	34	266
Benwell	36	6	..	57	1	1	..	..	556	7	..	4	78	..	..	1	51	798
Fenham	10	3	..	41	..	..	..	..	254	1	..	2	19	1	..	..	22	353
All Saints'	6	13	1	29	1	..	..	..	432	..	..	1	140	..	..	..	38	661
St. Andrew's	3	5	..	19	..	..	..	..	248	..	..	1	42	..	..	..	14	332
Jesmond	6	2	..	14	..	..	..	..	67	2	..	..	7	..	..	..	32	130
Dene	10	2	..	17	..	..	..	..	79	1	..	..	4	..	..	..	16	129
Heaton	12	9	..	45	..	..	..	..	187	..	..	2	21	2	..	..	34	312
Byker	23	9	..	37	..	1	..	..	463	1	..	5	21	3	..	1	67	631
St. Lawrence	12	12	..	46	2	..	..	..	533	..	2	2	22	3	..	..	101	735
St. Anthony's ...	10	5	..	21	1	..	..	..	572	..	..	2	40	4	..	..	53	708
Walker	24	17	1	29	..	..	..	1	723	..	3	7	136	2	..	..	111	1054
CITY	200	131	7	492	7	2	..	2	6834	41	13	70	825	18	..	2	903	9547

For particulars of cases of **TUBERCULOSIS**, see Section IV., pages 128 to 136.

* Notifiable from 6th March.

WARD INCIDENCE OF INFECTIOUS DISEASES,

EXCLUSIVE OF TUBERCULOSIS.

NOTIFIABLE DISEASES—Cases per 1,000 Population.														DEATHS per 1,000 Pop.		
WARD.	Diphtheria	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Encephalitis Lethargica.	Measles (including Rubella).	Puerperal Fever.	Chickenpox.	Ophthalmia Neonatorum.	Pneumonia.	Dysentery	Measles. (including Rubella).	Whooping Cough.	Zymotic Diarrhoea (under 2 years of age).
St. Nicholas' ..	..	0.56	1.12	..	..	..	..	19.4	..	2.25	0.28	1.97	..	0.28	0.28	..
*St. Thomas' ..	0.07	0.41	0.88	0.20	..	..	..	15.9	..	2.65	0.27	1.63	..	0.41	0.20	0.41
St. John's	0.44	0.57	0.82	0.13	..	..	..	30.0	0.13	2.28	0.44	4.55	..	0.57	0.19	0.63
Stephenson ...	0.45	0.51	1.02	..	..	..	..	30.6	0.10	4.40	0.30	2.83	..	0.56	0.30	0.20
Armstrong	0.67	0.37	2.08	..	0.12	..	..	25.7	0.18	3.54	0.98	3.06	..	0.49	0.55	0.12
Elswick	0.77	0.46	1.39	..	..	..	..	19.0	0.08	3.16	0.31	1.62	..	0.15	0.23	0.15
Westgate	0.38	0.19	1.75	..	..	..	..	32.7	..	3.82	0.13	2.13	..	0.44	0.25	0.06
†Arthur's Hill ..	0.40	0.60	0.70	..	..	0.01	..	17.6	..	3.40	0.40	3.40	0.05	..	..	0.20
Benwell	1.78	0.30	2.82	..	0.05	0.05	..	27.8	..	2.52	0.20	3.88	..	0.15	0.40	0.20
Fenham	0.82	0.25	3.37	..	..	..	..	20.9	..	1.81	0.16	1.64	..	0.16	..	0.16
All Saints'	0.33	0.72	1.61	0.06	0.06	..	..	24.0	..	2.11	0.06	7.79	..	0.61	0.50	0.56
St. Andrew's ..	0.23	0.38	1.46	..	..	..	..	19.0	..	1.08	0.08	3.23	..	1.38	0.30	0.30
Jesmond	0.56	0.19	1.30	..	..	..	..	6.4	..	2.97	..	0.65	..	0.09	0.09	..
Dene	0.78	0.15	1.32	..	..	..	..	6.2	..	1.24	..	0.31	..	..	0.08	0.08
Heaton	0.81	0.61	3.01	..	..	..	..	12.6	..	2.30	0.13	1.56	..	0.13	0.13	0.13
Byker	1.27	0.50	2.05	..	..	0.05	..	25.7	..	3.71	0.28	1.33	0.05	0.39	0.22	0.28
St. Lawrence ..	0.59	0.59	2.26	..	0.10	..	..	26.2	0.10	4.97	0.10	1.23	..	1.13	0.29	0.44
St. Anthony's ..	0.58	0.29	1.21	..	0.06	..	..	32.9	..	3.05	0.12	2.54	..	1.15	0.35	0.35
†Walker	1.41	1.00	1.71	0.06	..	..	0.06	42.6	0.18	6.54	0.41	8.13	..	1.24	0.47	0.53
CITY	0.70	0.46	1.73	0.02	0.02	0.007	0.007	24.2	0.05	3.18	0.25	2.97	0.007	0.54	0.27	0.28

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. † Includes Poor Law Institution and Wingrove Hospital.

‡ Includes City Hospital for Infectious Diseases, Walker Gate.

For Particulars of **TUBERCULOSIS**, see table on page 136.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES, EXCLUSIVE OF TUBERCULOSIS, MEASLES AND CHICKEN-POX.

DISEASES.	HOUSEHOLDS WITH						Mili- tary or Naval Cases	Public Insti- tutions *	TOTAL CASES. (Gross).	Cases from outside of City.	NET CASES.
	Single Cases	2 Cases each	3 Cases each	4 Cases each	5 Cases each	6 Cases & over					
Diphtheria (includ- ing Membranous Croup)	174	4	4	1	..	..	..	6	204	4	200
Erysipelas	123	..	..	..	..	..	..	11	134	3	131
Scarlet Fever	359	45	8	..	..	1	..	17	496	4	492
Enteric (or Typhoid Fever)	7	..	..	..	..	..	..	..	7	..	7
Cerebro-Spinal Fever	7	..	..	..	..	..	..	..	7	..	7
Poliomyelitis.....	2	..	..	..	..	..	..	..	2	..	2
Encephalitis Lethargica.....	2	..	..	..	..	..	..	2	4	2	2
Puerperal Fever .	13	..	..	..	..	..	..	8	21	8	13
Ophthalmia Neonatorum ..	58	..	..	..	..	..	..	13	71	1	70
Pneumonia.....	718	36	8	..	..	..	..	29	843	..	843
Malaria .....	..	..	..	..	..	..	..	1	1	1	..
Dysentery	2	..	..	..	..	..	..	..	2	..	2
TOTAL	1465	85	20	1	..	1	..	87	1792	23	1769

* See below.

Schools and Infectious Disease.—It was not found necessary to close any school on account of infectious disease during the year.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year :—

INSTITUTIONS, &C.	Diphtheria.	Erysipelas.	Scarlet Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Pneumonia.	Chicken-pox.	Ophthalmia Neonatorum.	Malaria.	TOTAL. *
Royal Victoria Infirmary.....	1	5	3	2	6	5	..	6	..	..	28
Fleming Memorial Hospital...	3	..	1	..	6	..	..	3	..	..	13
War Pensions Hospital .....	..	..	1	..	1	..	..	..	..	..	2
Wingrove Hospital .....	..	4	..	..	52	..	26	1	3	..	86
School for the Blind .....	..	..	..	..	..	..	1	..	..	..	1
City Hospital for Infectious Diseases (Staff)	2	1	6	..	..	..	..	..	..	1	10
Deaf and Dumb Institution...	..	..	..	..	..	..	..	2	..	..	2
Walker Accident Hospital ...	..	..	1	..	..	..	..	..	..	..	1
St Cuthbert's Grammar School .....	..	..	3	..	..	..	..	..	..	..	3
Convent of the Sacred Heart..	..	..	1	..	..	..	..	..	..	..	1
Maternity Hospital .....	..	..	..	..	..	2	..	..	10	..	12
Throat and Ear Hospital.....	..	..	1	..	..	..	..	..	..	..	1
Park Terrace Private Hospital	..	1	..	..	..	..	..	..	..	..	1
Mary Magdalene Hospital....	..	..	..	..	..	..	1	..	..	..	1
Northern Counties Orphanage	..	..	..	..	..	..	1	..	..	..	1
Conyers House Private Hospital .....	..	..	..	..	..	1	..	..	..	..	1
H.M. Prison.....	..	..	..	..	1	..	..	..	..	..	1
TOTAL	6	11	17	2	66	8	29	12	13	1	165

* Does not include any cases belonging to the City which could properly be assigned to their homes.

MILK SUPPLY IN RELATION TO INFECTIOUS DISEASES.

The source of the milk supply was ascertained in every case of fever and diphtheria. In no instance was there reason to suspect that milk was responsible for the conveyance of infection.

There were in the City before the war 714 small general shops retailing milk, few of them being fit places for the purpose. In 1918 the number was 668, but in that year, in connection with the Food Control Orders, vigorous action was taken, and has been continued since, with a view to weeding out the more unsuitable places. As a result, the number now stands at 271.

15 cases of scarlet fever and 8 cases of diphtheria occurred at business premises of various kinds, as shown in the following tables :—

SCARLET FEVER.

Baker	1	Ice Creamery	1	Cycle Repairer ...	1
Boarding House ...	3	Undertaker.....	1	Fruiterer	1
Public House	3	General Dealer.....	2	Draper	2

DIPHTHERIA.

Baker	1	Farm	1	General Dealer....	3
Fruiterer	1	Music Teacher	1	Dining Room	1

SCARLET FEVER.

Notifications of 492 cases were received during the year, and there were 5 deaths, which is equivalent to a mortality of 1·0 per cent. The type of the disease was mild on the whole.

DIPHTHERIA.

200 cases were notified during the year, and 10 died, a case mortality of 5·0 per cent.

Antitoxin was distributed free to medical practitioners in the City as follows :—

Number of medical practitioners who made application for antitoxin	32
Number of phials of antitoxin supplied	132
Number of cases of diphtheria notified	200
Number of cases of diphtheria removed to Hospital ...	186
Number of Hospital cases in which antitoxin was injected prior to admission	38

The fatality of the disease in recent years is shown in the subjoined table :—

Year.	DIPHTHERIA CASES. (All Forms.)	
	Number.	Case Mortality (per cent.).
1909	546	12·7
*1910	443	9·0
1911	507	7·5
1912	501	6·6
1913	368	7·6
1914	362	7·7
1915	275	9·5
1916	272	10·3
1917	226	14·6
1918	250	9·2
1919	320	6·9
1920	348	6·9
1921	353	6·2
1922	254	5·9
1923	200	5·0

* Antitoxin first distributed gratis April, 1910.

Particulars of the type of the disease as noted in cases sent to hospital will be found later in the section dealing with the City Hospitals.

MEASLES AND RUBELLA.

6875, cases (including 41 of rubella) were notified, and there were 152 deaths (corrected) in 1923, representing a death rate of 0·54 per 1,000 population, as compared with 0·03 in 1922, and a case mortality of 2·21 per cent. of notified cases.

DEATHS, 1923 (CORRECTED).

MONTH.	YEARS OF AGE.							Total.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10.	
January	1	7	..	..	..	..	..	8
February ...	4	5	1	1	1	..	..	12
March	6	8	6	2	1	4	..	27
April	7	16	6	5	..	..	..	34
May	4	10	5	2	1	3	..	25
June	8	16	4	2	..	..	..	30
July .....	..	8	3	..	..	..	..	11
August	1	1	1	..	..	..	..	3
September ..	..	1	..	..	..	..	..	1
October .....	..	..	..	..	..	..	..	..
November...	..	1	..	..	..	..	..	1
December ..	..	..	..	..	..	..	..	..
TOTAL ...	31	73	26	12	3	7	..	152

The following table shows the deaths in the various wards, and at different age periods :—

WARD.	Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'	1	..	..	..	..	..	1
St. Thomas'	1	3	1	..	..	1	..	..	6
St. John's	1	1	4	2	..	..	1	..	9
Stephenson	1	8	1	..	..	..	..	10
Armstrong	1	..	..	..	4	2	1	..	..	..	8
Elswick	2	..	..	..	..	..	2
Westgate	2	2	..	1	1	1	..	7
Arthur's Hill
Benwell	2	1	..	..	..	..	..	3
Fenham	1	..	..	1	..	..	..	2
All Saints'	1	1	7	1	1	..	..	..	11
St Andrew's	2	8	4	1	..	1	..	16
Jesmond	1	..	..	..	..	1
Dene
Heaton	1	1	..	..	..	..	2
Byker	1	2	3	1	..	..	..	7
St. Lawrence	1	1	3	12	3	2	1	..	..	23
St. Anthony's	1	..	12	5	2	..	2	..	23
Walker	1	1	5	8	2	2	..	2	..	21
TOTAL	1	2	6	22	73	26	12	3	7	..	152

Each Health Visitor visited and revisited selected cases occurring in her district. By this arrangement each case is seen immediately on receipt of the notification, and advice is given regarding the nursing and isolation

of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.

Measles Cases, including Rubella, notified during 1923.—

Cases notified by Medical Practitioners	4,977
Cases found by Health Visitors	1,693
Cases notified by Education Authorities	118
Cases notified by Parents	76
Cases found from Returns of Deaths	11
	<hr/>
	6,875

Of the total number of measles cases notified, 6,266, in 4,501 households (or 91 per cent.) were visited by the Health Visitors, and 5,864 revisits were paid.

The following particulars refer to the cases visited :—

	DWELLINGS OF					Total houses visited.
	1 room.	2 rooms.	3 rooms.	4 rooms.	More than 4 rooms.	
Families	838	1,855	1,009	581	218	4,501
Children	1,944	5,705	2,848	1,639	554	12,690
Cases	1,170	2,626	1,394	796	*280	6,266
Percentage of Cases to						
Children	60	46	49	48	51	49
Cases developing Pneumonia	72	132	47	21	11	283
Percentage of cases develop- ing Pneumonia	6·2	5·0	3·5	2·6	3·9	4·5
Deaths from Measles	45	67	13	11	4	140
Cases notified as Measles, Death certified as due to Pneumonia, Bronchitis or Convulsions	4	13	4	1	1	23
Case Mortality per cent. ...	4·2	3·0	1·2	1·5	*1·8	2·6

* In addition to the 280 cases, 543 cases were reported in better-class houses and were not visited. Amongst these only one death occurred, so that the actual mortality rate in houses of over 4 rooms was 0·72 per cent.

Isolation.—The isolation of the 6,266 visited cases was found to be good in 1,124, or 17·93 per cent. ; fair in 3,162, or 50·46 per cent. ; bad in 1,980, or 31·59 per cent.

Medical Attendance.—In 73 per cent. of the cases visited a doctor was in attendance.

Condition of Patient.—In 83 per cent. of the cases visited the disease ran a normal course, but bronchitis, pneumonia or other complications developed in the remainder.

Attendance at Schools.—1,650, or 26·3 per cent. of the affected children visited had previously attended school, 4,616, or 28·1 per cent. had never attended school, and of these latter 2,855, or 45·5 per cent. were contacts.

The following were the ages of children (visited) suffering from measles :—

Under 1 year	474
1-2 years	1006
2-3 years	1115
3-4 years	1218
4-5 years	698
5-6 years	739
Over 6 years	1016
	<hr/> 6266 <hr/>

WHOOPING COUGH.

78 deaths occurred from whooping cough. The particulars are as follows :—

MONTH.	YEARS OF AGE.						Total.
	0-1.	1-2.	2-3.	3-4.	4-5	5-10.	
January	3	2	1	..	2	..	8
February	7	1	2	2	1	..	13
March	4	4	..	1	1	1	11
April	4	4	..	..	..	..	8
May	7	..	1	1	..	..	9
June	1	3	1	2	..	..	7
July	1	1	..	..	..	..	2
August	2	1	..	2	..	1	6
September .....	..	..	..	..	..	..	..
October	1	3	..	..	..	..	4
November	2	1	..	..	1	..	4
December	2	2	2	..	..	..	6
Total	34	22	7	8	5	2	78

The death rate in 1923 was equivalent to 0·27 per 1,000 population, as compared with 0·13 in 1922.

ENTERIC FEVER.

7 cases were notified during the year, 1 of which died, giving a death rate of 0·003 per 1,000 population, and a case mortality of 14·3 per cent.

DIARRHŒA.

There were in all 102 deaths from the disease, equal to a death rate of 0·36 per 1,000 population, and this number included 79 deaths of children under two years of age.

FOOD POISONING.

One case of food poisoning was reported from the Newburn Urban District. The illness was ascribed to mussels purchased in the Bigg Market, Newcastle.

The retailers of shell-fish in the City and their supplies are kept under regular supervision, The sources of mussels are all well known and as satisfactorily guaranteed as is possible. Samples of these shell-fish have been taken repeatedly and examined for the presence of pathogenic bacteria, both in connection with the above case and otherwise, always, however, with a negative result.

TYPHUS.

No case of this disease occurred during the year.

SMALLPOX.

There was no case of smallpox in the City.

The following are the particulars, courteously furnished by the Clerk to the Guardians, of infant **Vaccination** in Newcastle during recent years. (Walker, which belongs to the Tynemouth Rural area for registration purposes, is not included).

Year.	Births Registered.	Successful Vaccinations	Unsuccessful Vaccinations	Exemption Certificates.	
				Number.	Percentage to Total Births
1905	7,958	7,264	27	65	0·8
1906	7,721	6,733	28	92	1·2
1907	7,610	6,702	16	94	1·2
*1908	7,747	6,414	20	449	5·8
1909	7,180	5,667	30	517	7·2
1910	7,023	5,532	22	683	9·7
1911	6,604	5,002	24	767	11·6
1912	6,715	4,625	18	982	14·6
1913	6,874	4,441	7	1,173	17·0
1914	7,023	4,230	11	1,499	21·2
1915	7,116	4,487	1	1,485	20·9
1916	7,117	4,405	9	1,509	21·2
1917	6,166	3,688	5	1,478	24·0
1918	6,092	3,488	15	1,362	22·4
1919	6,131	3,405	8	1,582	25·8
1920	7,955	4,403	45	2,074	26·7
1921	7,258	4,159	11	2,128	29·3
1922	6,936	3,556	16	2,116	30·5
1923	6,417	4,464	—	1,373	21·4

* Vaccination Act, 1907, came into force.

On the occurrence of smallpox in the home of a shop assistant, living outside Newcastle, but employed in the City, employers in Newcastle were advised to advocate vaccination among their staffs, with the result that in the last quarter of the year at least 21,000 persons were vaccinated or re-vaccinated.

The *Public Vaccinators and Vaccination Officers* for the various districts of the City are :—

Dene, Heaton and Byker Municipal Wards :—

DR. F. R. H. LAVERICK, Woodbine Villa, Heaton Road.
Deputy—DR. J. BOWER, 35, Heaton Road.

St. Anthony's and St. Lawrence Municipal Wards :—

DR. RICHARD DAGGER, 1, Rothbury Terrace.
Deputy—DR. ERIC C. DAGGER, 1, Rothbury Terrace.

Walker District :—

DR. T. J. RYAN, Welbeck Road.
Deputy—DR. WM. HUTCHINSON, Welbeck Road.

All Saints', St. Nicholas', St. Andrew's, Jesmond, and St. Thomas' Municipal Wards :—

DR. FRANK HAWTHORN, 10, Ellison Place.
Deputy—DR. O. W. OGDEN, 4, St. Mary's Terrace.

Fenham, Arthur's Hill, Westgate and St. John's Municipal Wards :—

DR. A. M. PATERSON, 1, Grove Street.
Deputy—DR. H. L. TAYLOR, 242, Westgate Road.

Stephenson, Elswick, Armstrong and Benwell Municipal Wards :—

DR. G. D. NEWTON, 8, Regent Terrace ; also 190, Westgate Road.
Deputy—DR. J. A. BRAND, 216, Westmorland Road.

Wingrove Hospital :—

DR. G. P. HARLAN.

Vaccination Officers :—

Western—W. J. WHITE, 63, Brighton Grove.
Eastern—WM. GARRETT, 34, Harbottle Street.

ERYSIPELAS.

131 cases of this disease were notified and there were 6 deaths.

PUERPERAL SEPTICÆMIA.

13 cases were notified, with 10 deaths. Inquiries were made concerning all of these. 10 of the cases were attended by doctors.

INFLUENZA AND PNEUMONIA.

These diseases accounted for 357 deaths as against 768 last year.

Total deaths at age periods.

Under 5 years.	5-15.	15-25.	25-45.	45-65.	65 and over.	Total.
210	21	17	34	36	39	357

As will be seen from the above figures, 210, or 59 per cent. of the deaths occurred below the age of 5 years.

Appended is a statement of the total net deaths at all ages in the City from influenza and pneumonia during 1923 and the previous 11 years :—

YEAR.	INFLUENZA.	PNEUMONIA.
1912	18	248
1913	19	339
1914	22	424
1915	22	433
1916	36	392
1917	27	418
1918	680	540
1919	604	561
1920	690	468
1921	65	411
1922	273	495
1923	15	342

843 cases of pneumonia, including influenzal-pneumonia, were notified. For the ages and ward distribution, see pages 89 and 90.

Of that number 751, or 83 per cent., were visited by the Department.

It was found that of these 701 visited cases, 576, or 82 per cent., were primary pneumonia, 15, or 2 per

cent., were cases of influenzal-pneumonia, and 110, or 16 per cent., were cases of pneumonia following other diseases.

Sex.—59 per cent. of the cases were males.

Ages.—The ages of the 701 cases visited were as follows :—

Under 1 year.....	134
1-5 years	305
5-15 years	100
15-25 years	49
25-45 years	67
45-65 years	33
and over 65 years	13
	<hr/> 701 <hr/>

Of these, 98 were school children.

Housing.—164 cases occurred in 1 roomed dwellings, 266 cases occurred in 2 roomed dwellings, 133 cases occurred in 3 roomed dwellings, and 138 cases occurred in more than 3 roomed dwellings.

Type of House.—310 cases occurred in flats, 308 cases in tenements, and 83 in self-contained houses.

Isolation.—The isolation was good in 30 per cent. of the cases, fair in 26 per cent., and bad in 44 per cent.

Ventilation was good in 65 per cent. of the cases.

Previous History—

There was a previous history of Measles	in 214 cases.
“ “ “ Whooping Cough	in 144 cases.
“ “ “ Influenza	in 47 cases.
“ “ “ frequent winter Coughs and Colds	in 619 cases.
“ “ “ Pneumonia	in 106 cases.
“ “ “ Tuberculosis	in 14 cases.

Deaths.—107, or 15 per cent. of the visited cases of pneumonia died.

VENEREAL DISEASES.

Syphilis was certified as the cause of death in 15 cases.

The work of the treatment clinic has been continued successfully. 2,303 old and new cases attended 33,139 times as out-patients. 15 cases accounted for 349 in-patient days. Of the 890 new cases 277 were syphilis, 495 gonorrhœa, 33 soft chancre, and 85 conditions other than venereal. 78 per cent. were males.

1,647 doses of salvarsan substitutes were administered to out-patients, and 13 to in-patients.

1,418 Wasserman reactions were carried out at the College of Medicine, and 72 microscopical examinations of pathological material were made at the College and 1,091 at the treatment clinic. The irrigation stations for males and for females in connection with the clinic have been in full use during the year.

Newcastle Residents Notified as Attending other Centres.

Cases.—Syphilis, 13; gonorrhœa, 9; soft chancre, 1; conditions other than venereal, 4.

Attendances.—225.

Doses of salvarsan substitute given, 44.

Information as to ophthalmia neonatorum will be found on page 83.

ACUTE POLIOMYELITIS, EPIDEMIC CEREBRO-SPINAL MENINGITIS, ETC.

NUMBER OF CASES.

TOTAL NO. OF CASES.	0-1 Year.						1-5 Years.						5-10 Years.						10-15 Years.						15 Years and Over.						Acute Poliomylitis. Polio- Encephalitis.	Cerebro-Spinal Fever. Encephalitis Lethargica.	Acute Poliomylitis Polio- Encephalitis.	Encephalitis Lethargica. Cerebro-Spinal Fever.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	Male.			Female.			Male.			Female.			Male.			Female.			Male.			Female.			Male.			Female.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	2	..	1

CASES REMOVED TO ISOLATION HOSPITAL.

CITY HOSPITALS FOR INFECTIOUS DISEASES.

Accommodation.

NAMES AND SITUATION OF HOSPITALS.	TOTAL AVAILABLE BEDS.
City Hospital for Infectious Diseases, Walker Gate (including Phthisis Pavilions, 62 Beds)	294
Smallpox and Isolation Hospitals, Town Moor	172

YEAR.	Population of the City.	Number of Beds at Hospital for Fever Cases.	Total Admissions (exclusive of Phthisis).	Percentage of Notified Cases Admitted.
1890	182,866	104	219	21·3
1900	213,039	104	290	38·6
1909	263,064	172	1,090	78·0
1910	265,077	172	912	83·0
1911	267,261	172	1,110	83·1
1912	269,193	172	1,542	86·4
1913	271,295	172	1,286	88·3
1914	271,523	172	1,835	78·9
1915	278,107	232	1,886	90·5
1916	278,107	232	1,380	87·0
1917	278,107	232	1,303	87·5
1918	278,107	232	1,245	87·5
1919	275,099	232	1,370	84·3
1920	286,061	232	1,710	86·4
1921	278,400	232	1,683	82·4
1922	281,600	232	1,032	86·3
1923	283,800	232	991	92·6

Diseases Admitted—1923.

		AFTER OBSERVATION PROVED TO BE:—																						
SENT IN AS	Number.	Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Fever.	Measles.	Mumps.	Erysipelas.	Epidemic Cerebro-Spinal Meningitis.	Other Forms of Meningitis.	Encephalitis Lethargica.	Pneumonia.	Other Respiratory Diseases.	Tonsillitis.	Gastro-intestinal Disease.	Skin and Septic Diseases.	Varicella.	Ophthalmia Neonatorum.	Vincent's Angina.	Acute Rheumatism.	Pertussis.	Malaria.	No appreciable Disease.	Unclassified.
Scarlet Fever	459	429	2	..	..	7	..	..	..	..	..	2	..	6	..	4	2	..	..	1	..	..	6	..
Diphtheria	224	4	161	4	..	7	..	..	..	..	..	..	7	29	..	..	..	..	2	..	..	..	1	9
Diphtheria Carriers	5	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	20	..	..	..	12	..	..	..	..	..	..	2	1	..	1	..	..	..	..	1	..	..	..	3
Measles	115	..	..	..	..	114	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Pneumonia	69	1	..	..	..	7	..	..	..	..	..	49	7	..	..	..	..	..	..	..	2	..	3	..
Pertussis	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	..	..
Epidemic Cerebro-Spinal Meningitis	11	..	..	..	..	..	..	..	7	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..
Other forms of Meningitis	11	..	..	..	..	..	..	..	3	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Respiratory Diseases	3	..	..	..	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..
Varicella	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	..	..	..	..	..	..	..
Erysipelas	21	..	..	..	..	..	..	19	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Encephalitis Lethargica ..	2	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Ophthalmia Neonatorum ..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..
Tonsillitis	4	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..
Malaria	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Mumps	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gastro-intestinal Disease ..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Skin and Septic Diseases ..	6	..	..	..	..	1	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	1
Acute Rheumatism	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Unclassified	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8
TOTAL	991	434	163	9	13	136	1	19	10	10	1	56	16	39	3	10	19	2	2	4	10	1	10	23

CITY HOSPITAL, WALKER GATE.
(Fever Pavilions).

Admissions during the year—991.

The *average daily number* of patients in the hospitals was 80, exclusive of 60 cases of phthisis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
t Fever	18.4	33.0	35.0	50.1	84.5	83.8	88.0	90.6	81.4	91.3	94.5	91.9	99.3	88.0	85.7	82.3	84.7	91.9
heria	8.3	28.7	40.0	36.8	80.1	80.5	81.8	81.5	84.8	89.1	84.6	82.0	91.6	74.4	89.1	82.7	91.7	93.6
ic Fever	38.9	48.0	54.5	52.0	90.5	92.0	91.2	91.1	94.1	87.0	96.6	96.0	93.1	80.0	90.0	71.4	84.2	100.0
cases of the ve, together h Continued Typhus r and Cere- spinal r, &c.	21.3	34.6	38.6	47.8	83.0	83.1	86.4	88.3	82.6	90.5	87.0	87.5	87.5	84.3	86.4	82.4	86.3	92.6

Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES NOT REMOVED DURING 1923.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases. (Verified)	Deaths.	Case Mortality per cent.	Total Cases.	Deaths.	Case Mortality per cent.
Scarlet Fever	434	4	0.9	40	1	2.5
Diphtheria ...	163	7	4.3	13	2	15.4
Enteric Fever	13	1	7.7	—	—	—

Expenses of Maintenance.—Of the patients admitted, the expense of maintenance is charged as under :—

	CASES..
To the Newcastle Sanitary Authority	977
To private guarantors	8
To the War Office and Admiralty	1
Tyne Port Sanitary Authority	2
Ministry of Pensions	1
Other Local Authorities	2
TOTAL	991

Admissions and Deaths, 1923.

DISEASE.	ADMISSIONS.												DEATHS.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Scarlet Fever	35	23	22	23	17	23	22	30	42	61	73	63	434	1	1	1	1	2	2	1	2	1	2	1	1	4
Diphtheria	15	14	16	13	6	9	8	8	9	21	19	25	163	1	1	1	1	1	1	1	1	1	1	1	1	7
Diphtheria Carriers	3	..	1	1	1	2	2	9	1
Enteric Fever	2	1	4	2	..	1	..	13	6	4	4	1	22
Measles	4	6	36	30	24	23	9	3	1	..	136	1	1
Mumps	1	1	2	1	1	..	1
Erysipelas.....	1	6	4	2	1	1	1	19	1	3
Epidemic Cerebro Spinal Meningitis.....	1	1	2	1	2	..	..	..	..	2	..	1	10	1	2	2	1	2	2	1	..	2	..	..	10
Other forms of Meningitis..	1	1	1	..	1	4	1	..	..	..	..	1	10	1	1	1	..	1	2	1	..	1	..	1	8
Encephalitis Lethargica .....	..	..	..	..	..	..	6	2	4	1	..	..	1	..	..	1	3	..	..	2	1	2	..	..	12
Pneumonia	3	6	7	5	8	1	6	2	..	4	1	9	56
Other Respiratory Affections	4	..	3	1	2	..	..	2	1	1	..	2	16	..	..	..	..	..	..	..	..	..	..	..	..
Tonsillitis	4	4	1	1	8	4	2	5	5	..	3	2	39	..	..	..	..	..	..	..	..	..	..	..	..
Skin and Septic Disease	1	1	2	3	1	1	..	..	..	..	2	..	10	..	..	..	..	..	..	..	..	..	..	..	..
Gastro-Intestinal Disease...	..	..	..	1	..	1	..	..	..	1	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Varicella	1	1	1	..	1	2	..	..	1	7	2	3	19	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia Neonatorum ..	..	..	..	2	1	..	2	1	1	1	..	1	2	..	..	..	..	..	..	1	..	..	..	..	4
Pertussis	2	..	1	..	1	..	..	1	..	..	..	..	10	2	..	1	..	..	..	..	..	..	..	..	..
Vincent's Angina .....	..	..	..	..	1	..	..	1	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatism	1	..	..	..	1	1	..	1	..	1	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..
Malaria .....	..	1	1	..	..	..	2	..	..	2	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..
No appreciable Disease	1	1	1	..	1	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..
Unclassified .....	..	4	3	2	2	..	2	1	2	1	..	6	23	..	1	..	1	1	..	..	..	..	..	1	4
TOTALS	79	68	102	85	78	69	56	59	69	105	105	116	991	7	5	12	13	9	8	5	1	3	8	2	3	76

Length of Stay in Hospital of Fatal Cases.—Of the foregoing, the following *died within 24 hours of admission*--diphtheria, 1; pneumonia, 2; measles, 2; epidemic cerebro-spinal meningitis, 1; while 1 case of diphtheria, 3 of pneumonia, 1 of tuberculous meningitis, 2 of measles, 1 of epidemic cerebro-spinal meningitis, and 1 of encephalitis lethargica died within 48 hours of admission to hospital.

**Present Death Rates compared with those
of Previous Years.**

RETURN SHOWING THE NUMBER OF CASES OF
SCARLET FEVER, DIPHTHERIA, AND ENTERIC FEVER ADMITTED TO HOSPITAL
AND MORTALITY RATES PER CENT.
1891-1900.

YEAR.	NUMBER OF CASES ADMITTED TO HOSPITAL.			NUMBER OF DEATHS.			CASE MORTALITY PER CENT.		
	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.
1891.....	110	10	67	5	6	6	4.5	60.0	8.9
1892.....	244	18	26	8	5	5	3.3	27.8	19.2
1893.....	202	15	49	5	2	6	2.5	13.3	12.2
1894.....	230	8	60	6	3	13	2.6	37.5	21.7
1895.....	319	41	75	10	10	21	3.1	24.4	28.0
1896.....	294	24	67	7	..	14	2.4	..	20.9
1897.....	210	10	64	7	2	17	3.3	20.0	26.6
1898.....	179	21	197	9	5	33	5.0	23.8	16.7
1899.....	193	19	77	9	6	14	4.7	31.6	18.2
1900.....	211	29	37	9	8	8	4.3	27.6	21.6
	2,192	195	719	75	47	137	3.4	24.1	19.1

1914-1923.

1914.....	1,404	251	86	43	21	13	3.1	8.4	15.1
1915.....	1,305	223	88	37	18	10	2.8	8.0	11.4
1916.....	677	210	57	19	23	8	2.8	10.9	14.0
1917.....	409	164	12	13	22	1	3.1	13.5	8.3
1918.....	381	205	26	9	13	2	2.6	6.3	7.8
1919.....	630	196	11	21	13	..	3.3	6.6	0.0
1920.....	1,105	244	11	17	19	1	1.5	7.7	9.0
1921.....	1,115	241	9	9	15	2	0.8	6.2	22.2
1922.....	560	173	15	2	14	3	0.3	8.0	20.0
1923.....	434	163	13	4	7	1	0.9	4.3	7.7
	8,020	2,070	328	174	165	41	2.2	8.0	12.5

Diphtheria.—Of the 163 patients in hospital 140 were faucial or pharyngeal cases, of whom 4 died, a case mortality per cent. of 2.9; 23 were laryngeal or tracheal

cases, of whom 3, or 13·0 per cent. died ; 4 of these laryngeal cases had also involvement of the nasal passages and 1, included above, or 25 per cent., died. Tracheotomy was performed in 11 cases of diphtheria, of whom 3, or 27·3 per cent., died.

The diagnosis of each case was confirmed bacteriologically, either before or after admission to hospital.

Antitoxin is administered to all cases of diphtheria admitted to hospital which have not received the remedy at home.

Bacteriological diagnosis is made in the great majority of cases before admission.

Mixed Infections.—50 patients sent into hospital, or 5·0 per cent., were found on admission to be suffering from two or more distinct infectious diseases, as follows:—

Scarlet Fever with Diphtheria	1
Scarlet Fever with Measles..	1
Scarlet Fever with Varicella	2
Scarlet Fever with Tubercular Meningitis	1
Scarlet Fever with Stomatitis	1
Scarlet Fever with Ringworm	1
Diphtheria with Scarlet Fever	1
Diphtheria with Measles	1
Measles with Pertussis and Pneumonia	8
Measles with Pneumonia	27
Pertussis with Pneumonia	4
Cerebro-Spinal Fever with Measles	1
Erysipelas with Furunculosis	1
	—
	50
	—

Thus, 1·4 per cent. of the cases of scarlet fever were suffering from, or incubating, one or more additional infectious diseases on admission, and 1·2 per cent. of the cases of diphtheria.

Cross Infection.—During the year 3 patients developed a second infection in the wards, or 0·3 per cent. of the total admissions to hospital. These were all scarlet fever cases, which developed varicella. The infection was contracted from another patient who was incubating chicken pox on admission to hospital.

“ Return ” Cases.—The following are details of the “ return ” cases of scarlet fever during the year :—

SCARLET FEVER.	“ Infecting ” Cases.		“ Return ” Cases.		“ Infecting ” Cases.
Total Admissions.	No.	Per- centage.	No.	Per- centage.	Average Day of Disease when Discharged.
434	14	3·2	16	3·6	31·4

SEASONAL OCCURRENCE.

QUARTER.	Total Scarlet Fever Admissions.	“ Infecting ” Cases.		“ Return ” Cases.	
		No.	Percentage	No.	Percentage.
January to March	80	4	5·0	4	5·0
April to June	62	1	1·6	3	4·8
July to September	92	4	4·2	4	4·3
October to December ..	200	5	2·5	5	2·5

Of the 14 “ infecting ” cases : (a) 7 had no complications or discharges whilst in hospital, and remained “ clean ” after reaching home ; (b) 5 had no complications whilst in hospital but developed discharges after reaching home ; and (c) 2 were “ dirty ” cases whilst in hospital but were “ clean ” on discharge.

Of the above classes, the average day of disease on discharge from hospital of the supposed infecting cases, and the period elapsing after that discharge and the onset of illness in the “ return ” case, were as follows :—

Class	(a)	—36	and	8	days.
Class	(b)	—52	„	10	„
Class	(c)	—82	„	13	„

"RETURN" CASES FOR YEARS 1906-1923.

YEAR.	Total Scarlet Fever Admitted.	" Infecting " Cases.		" Return " Cases.	
		No.	Percentage.	No.	Percentage.
1906.....	442	7	1.6	10	2.3
1907.....	390	11	2.8	17	4.4
1908.....	283	4	1.4	5	1.8
1909.....	623	23	3.7	30	4.8
1910.....	465	18	3.9	20	4.3
1911.....	605	26	4.3	30	4.9
1912.....	1,018	47	4.6	52	5.1
1913.....	853	23	2.7	24	2.8
1914.....	1,404	78	5.6	96	6.8
1915.....	1,305	43	3.3	49	3.7
1916.....	677	22	3.3	24	3.5
1917.....	409	9	2.2	13	3.2
1918.....	381	13	3.4	14	3.6
1919.....	630	23	3.6	22	3.5
1920.....	1,105	37	3.3	39	3.5
1921.....	1,115	24	2.1	30	2.7
1922.....	560	9	1.6	7	1.2
1923.....	434	14	3.2	16	3.6

Hospital and Home " Isolation " Compared.

In order to determine the relative liability to further infection, subsequent to the first, in hospital and home-isolating households respectively, a careful record has been kept for eleven years of the number of presumably susceptible persons in each invalided house, all, other than the original patient, below 12 years of age being so classed, and the proportionate incidence of secondary cases calculated.

Cases occurring within seven days of the " isolation " of the original case were not counted, as these probably acquired their infection before the influence of the " isolation " could be felt.

Cases occurring subsequently to the seventh day of " isolation " of the original case, and prior to the release of the latter, were classed as " incidental " infections.

Cases occurring within 28 days after the release of the original case from " isolation " were classed as " return " infections.

The following table shows the results obtained :—

YEAR	1913		1914		1915		1916		1917		1918		1919		1920		1921		1922		1923		11 YEARS.	
Patient "isolated" at.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.
"Susceptibles" in the homes of each class of patient	1131	53	1708	244	1462	86	800	8	509	17	450	20	726	47	1203	87	1401	147	647	50	563	16	10600	775
"Incidental" infections	69	3	78	28	85	7	33	2	25	..	18	..	59	1	69	5	88	16	37	5	31	2	592	69
Percentage of "incidentals" to "susceptibles"	6.1	5.7	4.6	11.5	5.8	8.1	4.1	25.0	5.0	..	4.0	..	8.1	2.1	5.7	5.7	6.3	10.9	5.7	10.0	5.5	12.5	5.6	8.9
"Return" Infections	29	..	84	..	55	2	21	1	20	..	14	..	22	..	49	3	30	7	7	1	17	1	348	15
Percentage of "returns" to "susceptibles"	2.6	..	4.9	..	3.8	2.3	2.6	12.5	3.9	..	3.1	..	3.0	..	4.1	3.4	2.1	4.8	1.0	2.0	3.0	6.2	3.3	2.0
Total of "incidentals" and "return" infections	98	3	162	28	140	9	54	3	45	..	32	..	81	1	118	8	118	23	44	6	48	3	940	84
Percentage of this total to "susceptibles."	8.7	5.7	9.5	11.5	9.6	10.5	6.7	37.5	8.8	..	7.1	..	11.2	2.1	9.8	9.2	8.4	15.6	6.8	12.0	8.5	18.7	9.0	10.8

For the purpose of this table a "return" case is counted to the year in which the "infecting" case was admitted, even though the latter may have been discharged, or the "return" case admitted, in the following year.

Thus it is seen, on eleven years' working, that there are fewer secondary cases in the households which sent their first case to hospital. This difference is the more marked when one analyses the relative housing accommodation of the two classes. Thus for every "susceptible" remaining at home among the hospital-isolating class, there were on an average 2·1 rooms, whereas in the home-isolating class there was an average of at least 5·7 rooms for each "susceptible," the home class having therefore more than twice the accommodation of the others, and being in fact selected on that account. If, therefore, home isolation were as efficient, case for case, as hospital, one would have expected to find a great preponderance in favour of the home class in the above evidence, instead of which the result is the other way.

OTORRHŒA AND RHINORRHŒA.

The specialist treatment of these conditions was continued during 1923. The results were very encouraging, there being a definite decrease in the number of days in hospital compared with the average length of stay prior to the commencement of this work in 1921.

The average number of days' stay in hospital of cases developing otorrhœa or rhinorrhœa was 43·5, as against 44·7 in 1922, a decrease of one day. In regard to patients who developed ear discharge the average duration of treatment was 15 days, compared with 20 days in 1922. The duration of treatment of those with nasal discharge decreased from 21 to 14 days. Considering this marked decrease in the number of days' treatment, a corresponding decrease might be expected in the total number of days' stay in hospital. This did not occur, the reason being that a fewer number of cases

of otorrhœa and rhinorrhœa occurred than usual, and that two of these cases had to be kept in hospital for long periods following upon operations for mastoiditis by Mr. Maclay.

The diminished number of patients having these complications is due in great part to the lessened incidence of scarlet fever in the City this year, and consequently the fewer admissions to the City Hospital.

One other factor, however, should not be lost sight of in this connection, viz., the prophylactic inoculation of vaccines against these discharges, which may have produced an immunity in several cases.

Subsequent Progress.—Of 55 cases of otorrhœa or rhinorrhœa visited from six to twelve months after leaving hospital, 50, or 90 per cent. were found to have remained free from discharges. 5 still had some running from the ear or nose, this occurring usually when the child contracted a “cold.” Two of these cases were old-standing, having commenced a considerable time before entering hospital.

Operations.—14 operations for removal of tonsils and adenoids were performed; in the rhinorrhœa cases the discharge dried up in an average of 11 days after the operation, and in the otorrhœa cases in an average of 9 days, indicating clearly the value of this operation in many cases of running ears and noses, in which enlarged and often septic tonsils and adenoids frequently initiate and certainly keep up the discharges.

Prophylaxis.—The experimental work concerned with preventive inoculation against otorrhœa and rhinorrhœa in scarlet fever was carried on throughout the year 1923.

The technique adopted by Dr. S. J. Clegg was continued, so far as possible every alternate scarlet fever patient being inoculated with vaccine prepared from nasal and ear discharges.

Since January, 1923, there have been 611 patients admitted to the City Hospital with scarlet fever. 258 of these cases received prophylactic inoculation with the stock vaccines. The number of these who subsequently developed rhinorrhœa or otorrhœa or both was 25, while of the 453 remaining cases not inoculated 61 developed one or other of these complications.

Thus the percentage of discharges among the previously inoculated was 9·6 per cent., and in the case of the uninoculated 13·5 per cent.

As already indicated, the scarlet fever admissions to the City Hospital in 1923 were the lowest for a considerable number of years, and the type of disease also was exceptionally mild.

These factors may be thought to exercise some influence upon the occurrence of complications; nevertheless, the disparity between the two figures may be of some significance, and is thought to justify the continued use of these vaccines.

Average stay in Hospital during the last Sixteen Years.

YEAR.	All Cases.		Scarlet Fever.		Diphtheria (including carriers).		Enteric Fever.		Other Diseases.	
	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days
1908	614	48.4	283	56.3	220	40.0	88	48.5	25	31.8
1909	1,090	49.2	623	54.3	334	41.6	56	45.9	78	42.8
1910	912	44.4	465	51.3	317	37.2	47	46.4	83	32.5
1911	1,110	45.6	605	50.5	375	41.9	68	44.4	62	20.2
1912	1,542	45.8	1,018	46.1	383	45.7	82	46.2	59	20.9
1913	1,286	45.5	853	47.6	254	47.9	109	43.4	70	19.6
1914	1,835	41.6	1,404	44.4	251	34.4	86	41.2	94	20.2
1915	1,886	41.3	1,305	47.1	223	35.6	88	44.0	271	17.2
1916	1,380	35.7	677	42.5	210	38.2	57	48.8	436	22.3
1917	1,303	33.9	409	46.5	164	43.5	12	59.8	718	24.0
1918	1,245	32.1	381	45.2	205	46.6	27	52.3	632	18.7
1919	1,370	33.8	630	41.5	196	54.8	11	39.2	533	16.9
1920	1,710	32.4	1,105	35.0	244	44.8	11	57.5	350	16.7
1921	1,683	28.0	1,115	31.1	241	31.6	9	36.4	318	13.9
1922	1,032	29.9	560	32.5	189	38.0	15	47.5	268	17.9
1923	991	29.6	434	33.7	172	41.2	13	49.4	372	18.7

Staff Sickness.

Nursing Staff.—42 of the Nursing Staff were off duty owing to sickness for a total of 1,073 days. Six contracted scarlet fever, 3 diphtheria, 8 tonsillitis, 2 acute rheumatism, 1 mastoiditis, 1 mumps, 1 erysipelas, and 1 chronic suppurating glands.

Domestic Staff.—5 were off duty through sickness for a total of 114 days. 2 contracted tonsillitis, and 1 scarlet fever.

Bacteriological Laboratory, City Hospital.

The following examinations were made in connection with the patients in the fever wards :—

Swabs for Diphtheria Bacilli	936
Other Examinations	43
TOTAL	979

SMALLPOX AND ISOLATION HOSPITALS, TOWN MOOR.

These Hospitals were in use from 7th to 14th March, and again from 4th to 11th July. Three smallpox contacts were under observation during these periods.

DISINFECTION.

8,819 cases of notifiable infectious disease have been inquired into by the Infectious Disease Inspectors and Health Visitors, and, with the exception of measles, the houses or rooms connected therewith disinfected by spraying with formalin. In connection with cases of tuberculosis, 703 houses, including 740 rooms, were similarly disinfected. Disinfection was also carried out in 176 special cases.

65 otorrhœa cases were visited.

In all cases except measles the bedding and other infected articles were removed to the Disinfecting Station at the City Hospital, Walker Gate, and after sterilisation by steam returned to the owners.

Inquiries were also made in connection with 26 smallpox contacts. These persons were kept under observation until the possible incubation period was over.

265 extra visits of supervision to the cases left at home were made by the Infectious Disease Inspectors.

INFECTED ARTICLES PURIFIED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1922	1923	1922	1923
19,857	17,728	17,472	17,396

71 articles of clothing, etc., were also disinfected at the Smallpox Hospital.

The staff have thus dealt with 35,195 articles at the two disinfectors during the year.

Fluid disinfectant, in half-pint tins, was given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the disinfectant was properly and economically used.

DISINFECTANTS DISTRIBUTED—1923.

FROM	FOR INFECTIOUS DISEASES.	FOR PHTHISIS.
	FLUID ($\frac{1}{2}$ pint tins.)	FLUID ($\frac{1}{2}$ pints.)
Health Department	289	....
Tuberculosis Dispensary .....	....	640
Corporation Yard, Benwell	81	....
TOTAL	370	640

BACTERIOLOGICAL INVESTIGATIONS, 1923.

The following is a summary of the bacteriological investigations carried out on behalf of the Health Department of the Newcastle Corporation by the Department of Bacteriology at the University of Durham College of Medicine.

4,681 specimens were submitted for examination. The nature of the investigations and the results obtained were as follows:—

	DIPHTHERIA.			PHTHISIS.			ENTERIC.		
	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.
No. of Ex- aminations	906	121	785	602	101	501	52	13	39

MILK EXAMINATIONS :—

	Total.	Found.	Not Found.
1. For the tubercle bacillus	178	8	170
2. Bacterial content of organisms other than the tubercle bacillus (the colon bacillus being taken as the indicator) :—			
Colon bacilli not found in 1 cc. or less			3
Colon bacilli found in 1 cc., but not in less			15
Colon bacilli found in 0·1 cc., but not in less			80
Colon bacilli found in 0·01 cc., but not in less			51
Colon bacilli found in 0·001 cc., but not in less ...			14
Colon bacilli found in 0·0001 cc., but not in less...			7
Colon bacilli found in 0·00001 cc., but not in less..			7
			<hr/> 177 <hr/>

95 samples of “ Graded Milk ” were examined during the year according to the scheme of the Ministry of Health under the Milk and Dairies (Amendment) Act, 1922. The following is a summary of the results obtained :—

	Satisfied the Test.	Failed to satisfy the test.
“ Certified ” Milk	18	6
“ Grade A ” Milk (Tuber- culin tested).....	40	30
“ Pasteurised Milk ” .....	..	1
	<hr/> 58 <hr/>	<hr/> 37 <hr/>

WATER EXAMINATIONS :—

Class I. (Colon bacilli not found in 100 cc. or less).....	7
Class II. (Colon bacilli found in 100 cc. but not in less)	84
Class III. (Colon bacilli found in 10 cc. but not in less)	89
Class IV. (Colon bacilli found in 1 cc. but not in less) ..	..
	<hr/> 180 <hr/>

VENEREAL DISEASES :—

	Tot. l.	Serological reactions.	Microscopical examinations.
No. of Ex minations ..	2431	2359	72

OTHER EXAMINATIONS :—

(a) **Diphtheria.**—Virulence tests of diphtheria bacilli were done in 9 cases.

5 cases proved virulent ;

1 case proved non-virulent ; and in

3 cases no diphtheria organisms were isolated.

(b) **Enteric Fevers.**—28 specimens of material were received from the Infectious Diseases Hospital and examined for organisms of the enteric group.

B. typhosus was isolated in 2 cases.

B. paratyphosus A. was isolated in no case.

B. paratyphosus B. was isolated in 3 cases.

B. Morgan No. 1 was isolated in 2 cases.

B. dysenteriae (Flexner) was isolated in 1 case.

No pathogenic organisms of the group were isolated in 20 cases.

5 specimens from sources other than the Hospital proved negative.

(c) **Bacillary dysentery.**—5 specimens examined for dysentery bacilli proved negative.

(d) **Tuberculosis.**—3 specimens of cerebro-spinal fluid from a case of suspected tuberculous meningitis proved negative.

3 suspected tuberculous lesions from a cow were submitted for examination. These gave positive results.

(e) **Food-Poisoning.**—During February two specimens of meat paste were examined for organisms of the food-poisoning group, with negative results.

Five specimens of mussels were similarly examined with negative results.

S. H. WARREN,

*Deputy for Director of
Public Health Laboratory.*

*University of Durham College of Medicine,
8th July, 1924.*

**REPORTS OF THE
TUBERCULOSIS MEDICAL OFFICER
AND THE
MEDICAL SUPERINTENDENT OF BARRASFORD SANATORIUM.**

IV.—TUBERCULOSIS.

**TUBERCULOSIS DISPENSARY,
INSTITUTIONAL TREATMENT.**

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

Herewith I beg to submit my report on the work of the Tuberculosis Section during the year 1923.

As usual, the information is given mainly in tabular form ; the tables have been brought up to date, and in addition some new material has been included.

Compared with 1922, there was a definite increase in the number of notifications received, notably in respect of younger patients aged 1 to 10 years.

While the death rate was again the lowest on record the decline was not so pronounced as had been hoped ; the reason is that the mortality in the second half of the year was much higher than was anticipated.

In spite of the fact that the total tuberculosis death rate was lower in 1923 than in 1922, it is very significant that there was a definite increase (82 as compared with 63) in the number of deaths from tuberculosis of children below 10 years of age in 1923.

From tuberculous meningitis alone there were 45 fatal cases registered in 1923 between the years of 1 to 10 years, as against 29 in 1922.

The number of female deaths from pulmonary tuberculosis was also higher in 1923.

This increased mortality amongst the women and children is, as was foreshadowed in this report last year, probably the result of under nourishment and the general distress which are unfortunately so prevalent on Tyne-side in consequence of the continuance of the unprecedented lack of employment for the working men of the district.

Further, it is a regrettable fact that during the year an exceptional number of new female cases came under the notice of the Dispensary with the result that at December 31st, 1923, there was a much larger number of women, especially sputum positive cases, on the books than at the beginning of the year. In consequence there was an increased demand for institutional treatment for women; for example, the proportion of women to men under treatment in the Tuberculosis Wards at Walker Gate more than doubled in the course of the year. This need for additional accommodation for female cases has been still more acutely felt in the first few months of 1924.

The number of beds at Stannington was also insufficient; in the absence of Open-air Schools and Convalescent Homes much more could be done in the way of prevention by treating delicate contacts of definite cases if the means were at hand.

As explained in previous years, cases of surgical tuberculosis often require very prolonged treatment, and occupy the beds for protracted periods. There is still no institutional accommodation provided under the Tuberculosis Scheme for the treatment of non-pulmonary tuberculosis in adults; insured persons and others requiring this are still compelled to have recourse to the wards of the Union Infirmary.

A significant commentary on the above is the fact that whereas out of the 544 patients notified during the year as suffering from pulmonary tuberculosis 200 were treated in beds provided by the City Council, only 5 out of 289 patients notified as suffering from "other forms" of tuberculosis were afforded institutional treatment under the "Scheme."

More deaths from pulmonary tuberculosis occurred in institutions during 1923 than in any previous year; it is hoped that the segregation of large numbers of helpless bedfast cases will justify itself by a reduction in the number of new cases in the future.

The *Voluntary Tuberculosis Care Council* has continued to do excellent work; 66 new cases were brought to its notice by the Dispensary Staff during the year.

Many other patients were referred elsewhere, notably to the Maternity and Child Welfare Section of the Department, the Citizens' Service Society, the Royal Victoria Infirmary, the Dental Hospital, United Services Fund, etc.

In addition to the routine work of the Dispensary, an investigation was instituted to endeavour to find out whether measles was a serious factor in increasing the morbidity of and mortality from tuberculosis.

As is well known, measles is occasionally followed by tuberculosis of an acute type, and is usually regarded as an important predisposing cause of tuberculosis. Measles came into the category of notifiable diseases in 1916, and in the years 1916, 1917, 1918 and 1919 16,264 cases were notified in Newcastle. The original notifications were checked with the Tuberculosis Notification Card Index Register.

The total number of patients notified as suffering from tuberculosis subsequent to an attack of measles was 133 during a period of time varying from 8 to 4 years. If one takes a mean of 6 years (January 1st, 1918, to December 31st, 1923) the average number of cases of tuberculosis annually in the population of 16,264 is only 22. Allowance must, of course, be made for deaths from measles and other causes, but nevertheless the average annual notified incidence rate of tuberculosis amongst them is very much lower than that for all the children aged 1 to 10 years during the years 1916-1923. Further, the average annual number of notified cases of, and deaths from tuberculosis at ages 1 to 10 years did not appear to be influenced in any way by excessive incidence of measles. A large amount of labour has been entailed, and it is impossible to give details in this report, but it is hoped to publish a resumé of the work later. In general, however, the inference is that measles is not in itself a serious predisposing cause of tuberculosis. Under bad economic conditions, such for example as were experienced in Vienna after the armistice, it is probably capable of rendering very acute a tuberculous lesion which would evolve into full activity in any case.

Treatment by artificial pneumo-thorax continued to be used extensively in the Tuberculosis Wards at Walker Gate; in many cases with remarkably good results.

When the Roengten Ray plant is installed in the hospital it is hoped that with the aid of the thoracoscope still better results will be obtained.

Yours faithfully,

W. H. DICKINSON,
Tuberculosis Medical Officer.

REPORT.

Notifications.—932 notifications were received during the year but some were duplicates, so that the total number of new cases was 833, of whom 544 were certified to be suffering from ‘pulmonary’ and 289 from ‘other forms’ of tuberculosis.

The details as regards sex and age are given in the accompanying table.

SUMMARY OF NOTIFICATIONS DURING THE PERIOD, 1ST JANUARY TO 31ST DECEMBER, 1923.

AGE PERIODS.	Number of Notifications on Form "A."												Number of Notifications on Form "B."			Number of Notifications on Form "C."		Number of Notifications on Form "D."		
	Primary Notifications.												Total Notifications (including Cases previously notified by other doctors).	Primary Notifications.	Total Notifications (including cases previously notified by other doctors).	Poor Law Institutions.	Sanatoria.	Poor Law Institutions.	Sanatoria.	
	TOTAL.																			
	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and upwards.									
Pulmonary— Males .....	..	15	15	12	30	42	71	45	40	20	13	303	336	During the year the School Medical Officer referred all suspicious cases to the Tuberculosis Medical Officer.			91	215	34	220
Females .....	..	14	20	11	26	28	61	48	21	10	2	241	276				68	116	25	100
Non-Pulmonary— Males	7	43	41	14	18	5	9	5	5	2	..	149	167				17	5	11	7
Females	11	33	28	21	17	9	11	5	1	4	..	140	153				23	8	8	7
TOTAL	18	105	104	58	91	84	152	103	67	36	15	833	932	199	344	78	334			

Form "A."—Notification by any Medical Practitioner of a case of Tuberculosis (whether at an Institution or otherwise).
Form "B."—Notification by School Medical Officers of cases of Tuberculosis in children attending Public Elementary Schools of which he has become aware in the course of inspection.
Form "C."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons admitted who are suffering from Tuberculosis.
Form "D."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons discharged who are suffering from Tuberculosis.

As far as possible every notified case is visited by the nurses and urged to visit the Dispensary for examination and classification with a view to treatment.

Of the 833 cases notified, 473 attended the Dispensary and 169 others were visited in their homes by the outdoor staff in the course of the year. The names of the patients certified to have died from tuberculosis, but not previously notified, are entered in the notification register, so that if the 86 patients in this category be deducted it will be seen that the Dispensary gets into touch with most of the known cases of tuberculosis.

With reference to the 105 cases, neither examined at the Dispensary nor visited by the nurses, some were living in institutions or died before they could be visited, while others were notified at the end of the year, and were visited early in 1924.

A table has been prepared to illustrate these points, and also to show the nature of the institutional treatment afforded to the cases notified during 1923. While 200 of the 544 patients notified as suffering from pulmonary tuberculosis were treated in beds belonging to, or controlled by the City Council, it is particularly noteworthy that only 5 out of a total of 289 patients notified as suffering from forms of tuberculosis other than pulmonary were treated in such beds.

The number of patients dying in the year of notification is also given, and it will be seen that practically one-third of all the new cases died in the same year as they were notified.

NOTIFICATIONS OF TUBERCULOSIS DURING 1923.

Part Affected.	Notifi- cations.	Attended Dispensary.	Visited by Nurse but not attended Dispensary.	Received Institutional Treatment.				Died during the Year.
				Barras- ford Sana- torium.	Sanat. Pav. Walker Gate.	Stann- ington Sana- torium.	Total.	
Lungs (Male)	303	196	46	61	57	3	121	102
„ (Female)	241	144	51	22	57	..	79	86
Other Forms (Male)	149	70	37	..	..	3	3	54
„ (Female)	140	63	35	..	..	2	2	42
TOTAL	833	473	169	83	114	8	205	284

During the year 170 cases (about one-fifth of the total) were notified by the Tuberculosis Medical Officer; of the 93 patients admitted to Barrasford Sanatorium, 51 were diagnosed and notified by the Dispensary Staff, as also 99 out of the 211 patients admitted to the Sanatorium Pavilions, Walker Gate—a proportion of practically 50 per cent.

Deaths.—441 deaths were registered as due to some form of tuberculosis, and of these 303 were certified as due to pulmonary tuberculosis (including cases of acute phthisis) and 138 to other forms of the disease.

On these figures the death rates per 1,000 population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	303	1·07
Other Forms of Tuberculosis	138	0·48
	<hr/>	<hr/>
Total Tuberculosis Death Rate (uncorrected) ...	441	1·55
	<hr/>	<hr/>

It must be noted, however, that 19 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (16 pulmonary; 3 other forms), while 46 of the deaths (8 pulmonary; 38 other forms) registered in Newcastle were those of temporary residents.

The corrected deaths and death rates per 1,000 of the population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	311	1·10
Other Forms	103	0·36
	<hr/>	<hr/>
All forms of Tuberculosis (corrected)	414	1·46
	<hr/>	<hr/>

The details as regards sex and age, together with the form of the disease, are given in the accompanying table :—

DEATHS FROM TUBERCULOSIS.—Sex and Age Distribution.

	Under 1 year.		1 and 2		3 and 4		5 to 10		10 to 15		15		16 to 20		20 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 70		70 and upwards		TOTAL.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Pulmonary Tuberculosis	3	4	..	1	7	2	4	1	4	4	1	4	14	17	20	17	29	31	33	32	36	12	19	7	6	..	3	2	167	137
Acute Phthisis	1	..	..	..	..	..	..	..	..	1	1	2	1	1	..	1	..	..	..	..	..	..	..	..	5	2	
Acute Miliary Tuberculosis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	2	
Tuberculous Meningitis	5	8	10	5	4	6	3	1	..	..	..	..	3	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	29	22
Abdominal Tuberculosis	6	5	2	2	1	..	..	..	..	..	..	..	3	..	1	1	..	..	1	2	..	..	..	..	..	..	..	11	12	
Spinal Column	1	..	..	..	1	1	..	..	1	..	..	1	..	..	..	..	3	2	
Tuberculosis of Joints	1	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	..	..	2	4	
Tuberculosis of Skin	
Disseminated Tuberculosis	2	..	1	..	..	..	1	..	1	..	..	1	..	1	1	..	3	..	..	..	..	1	..	..	..	..	..	5	6	
Tuberculosis of other Organs	2	2	..	2	..	..	2	..	..	..	..	2	2	2	
TOTAL	5	8	21	14	6	7	10	11	4	5	1	4	19	22	23	31	37	34	35	40	12	22	10	6	..	3	2	225	189		

74·0 per cent. of the 'lung' cases were known to the dispensary staff, 178 having visited the dispensary and an additional 52 having been attended in their homes by the visiting nurses.

Only 32·0 per cent. of the 'other forms' were attended at or from the dispensary. The proportion is higher than in previous years, but is still too low; the main reason is that 42·7 per cent. of the non-pulmonary cases were not notified before death (see later).

Of 311 deaths from pulmonary tuberculosis the diagnosis was verified bacteriologically in 191 instances, *i.e.*, 61·4 per cent.

If the 42 unnotified cases be excluded, the percentage is 71·0—a satisfactory figure.

81 of the sputum positive cases who died during the year were notified by the dispensary staff.

8 other dispensary patients who were known to be suffering from pulmonary tuberculosis and in whose sputum tubercle bacilli had been found, died during the year, the causes of death being registered as bronchitis in 3 cases, broncho-pneumonia in 2 cases, and tuberculous meningitis, general tuberculosis, nephritis, one case each.

Duration of Illness.—Wherever possible, in pulmonary cases, enquiry was made as to the length of time the deceased had been ill, and the average duration of illness was found to be 32·6 months. As in previous years, important differences were discovered when age and sex were considered, the figures being 36·5 months for adult males, 29·3 months for adult females, and 21·8 months for those below 16 years of age (both sexes).

The period between notification and death was, as one would expect, longer in the adult males than in the adult females and children, but averaged 14·2 months for all cases.

As the duration of illness for all cases was 32·6 months, each patient who died during the year must, on the average, have been ill for nearly 19 months before notification.

43·4 per cent. of the patients had either not been notified prior to death (13·5 per cent.), or died within 3 months of notification (29·9 per cent.).

Further details and comparative figures for previous years are submitted in the following table :—

RETURN OF DEATHS FROM TUBERCULOSIS OF THE LUNGS OCCURRING IN :—

	Deaths which occurred in these years.					
	Average for 1913—17.	Average for 1918—22.	1923.			
			M.	F.	Chil- dren.	Total.
Persons not notified	43	51	20	18	4	42
„ notified under 1 month .	35	47	31	14	6	51
„ between 1 and 3 „	94	48	17	17	8	42
„ between 3 and 6 „	53	30	21	21	2	44
Total under 6 months	226	183	89	70	20	179
Persons notified between						
6 and 12 months ..	47	46	19	15	3	37
„ 12 and 18 „ ..	28	21	10	11	2	23
„ 18 and 24 „ ..	15	15	8	6	..	14
„ 2 and 3 years	20	18	12	7	..	19
„ over 3 years	21	47	26	11	2	39
TOTAL	357	331	164	120	27	311

The figures for non-pulmonary forms of tuberculosis were even worse, for in 44 instances out of the 103 deaths, the disease had not been notified prior to death.

While the figures indicate that there is still considerable laxity in the notification of tuberculosis it is significant that a large number of the unnotified cases died in institutions and were looked after during their

last illness. The important point, however, is that the dispensary was not able to get in touch with the patients and their families before the fatal termination of the disease.

The records show that 19 of the 42 fatal unnotified cases of pulmonary tuberculosis, and 21 of the 44 fatal unnotified cases of "other forms" of tuberculosis died in hospitals.

Included in the 21 "other forms" were 18 cases of tuberculous meningitis; as in previous years careful enquiries were made amongst the home contacts of these patients, and several unrecognised cases of active tuberculosis discovered.

Occupation.—The nature of the work done and the conditions under which it is carried on have an important bearing on the incidence of disease, and probably account for the large excess of adult male over adult female deaths from pulmonary tuberculosis.

139 'insured persons' (108 males and 31 females) are included in the 311 deaths.

39 of the males were ex-Service men.

Family History.—In 98 instances amongst the 274 cases investigated after death, *i.e.*, in 35·8 per cent., there was a history that some near relation was suffering from, or had died of pulmonary tuberculosis. Here again the influence of sex was shown, for the figures were 28·8 for men, 46·6 for women.

House Accommodation.—The home conditions of the working classes are intimately associated with occupation and family history as predisposing to tuberculosis.

The numbers of rooms in the dwellings occupied by 274 persons who died of phthisis were as follows :—

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Total.
Deaths	29	76	73	60	31	5	274

As regards the type of house occupied 175 were flats, 56 tenements, 38 self-contained, and 5 common lodging houses.

Ward Distribution.—As in previous years a table is presented to show the ward distribution of tuberculosis during 1923. The estimated population of each ward is given, together with the number of notifications and deaths, and the rates per thousand living.

Of course the figures for one year are relatively small, and the rates may show great fluctuation from year to year, but when an average is taken over a period it is apparent at once that the death rate and notified incidence are both much higher in the poorer and more congested wards of the City.

Considerations of space prevent the publication of all the figures, but, while the tuberculosis death-rate for the City in 1923 was 1·46 the average for the nine years 1915-23 for St. Nicholas' Ward was 2·55, and for All Saints' 2·53, whereas the corresponding figures for St. Thomas and Jesmond Wards were 0·84 and 0·70 respectively.

When one ward shows, over a period of years, a death-rate from tuberculosis nearly four times as great as that of another ward of the same city, it is obvious that there is great scope for preventive measures in tackling tuberculosis, and that further careful consideration of the problem is warranted.

WARD DISTRIBUTION OF TUBERCULOSIS, 1923.

WARD.	Population 1923.	NOTIFICATIONS.						DEATHS.						New Patients Dispensary Registrar.
		Pulmonary	Attack rate per 1,000 of population.	Non- Pulmonary	Attack rate per 1,000 of population.	TOTAL.	Attack rate per 1,000 of population.	Pulmonary	Death rate per 1,000 of population.	Non- Pulmonary	Death rate per 1,000 of population.	TOTAL.	Death rate per 1,000 of population.	
St. Nicholas'	3,556	8	2.38	1	0.30	9	2.68	3	0.89	1	0.30	4	1.19	12
St. Thomas'	14,740	12	0.81	4	0.27	16	1.08	7	0.48	2	0.13	9	0.61	18
St. John's	15,808	39	2.47	20	1.26	59	3.73	22	1.39	6	0.38	28	1.77	58
Stephenson	19,788	42	2.12	26	1.31	68	3.43	29	1.46	16	0.81	45	2.27	71
Armstrong	16,362	42	2.56	28	1.71	70	4.27	18	1.10	2	0.12	20	1.22	88
Elswick	12,966	20	1.54	10	0.77	30	2.31	9	0.69	4	0.31	13	1.00	27
Westgate	15,985	26	1.62	11	0.69	37	2.31	15	0.93	7	0.44	22	1.37	45
Arthur's Hill	10,006	12	1.20	4	0.40	16	1.60	8	0.80	..	..	8	0.80	14
Benwell	20,225	35	1.73	23	1.13	58	2.86	18	0.89	12	0.59	30	1.48	71
Fenham	12,172	26	2.14	7	0.57	33	2.71	15	1.23	1	0.08	16	1.31	38
All Saints'	17,969	60	3.34	22	1.22	82	4.56	29	1.61	4	0.22	33	1.83	69
St. Andrew's	13,015	33	2.53	12	0.92	45	3.45	22	1.69	4	0.30	26	1.99	49
Jesmond	10,777	11	1.02	6	0.55	17	1.57	3	0.28	3	0.28	6	0.56	5
Dene	12,875	5	0.39	5	0.39	10	0.78	7	0.54	4	0.31	11	0.85	9
Heaton	14,804	26	1.75	9	0.61	35	2.36	19	1.28	1	0.07	20	1.35	48
Byker	18,081	36	1.99	19	1.05	55	3.04	19	1.05	7	0.38	26	1.43	76
St. Lawrence	20,330	43	2.11	31	1.53	74	3.64	31	1.53	11	0.54	42	2.07	84
St. Anthony's	17,356	31	1.78	18	1.04	49	2.82	14	0.81	7	0.40	21	1.21	69
Walker	16,985	37	2.18	33	1.94	70	4.12	23	1.35	11	0.65	34	2.00	74
City	283,800	544	1.91	289	1.02	833	2.93	311	1.10	103	0.36	414	1.46	925

NOTE.—Deaths occurring in Public Institutions have been allocated in every case to the Wards in which they resided.

The Tuberculosis Dispensary.

The number of new patients entered on the register was 925.

399 of them were sent direct by general practitioners, 310 were referred to the dispensary by the visiting nurses, 16 were sent by the Local War Pensions Committee or Medical Boards, 58 by the School Medical Officers and the remainder came from various sources, *e.g.*, Royal Infirmary 44, Citizen's Service Society, etc.

310 had been notified previously, and the balance (615) were contacts or suspects, and 170 of these were diagnosed and notified by the Tuberculosis Medical Officer.

331 were 'insured persons,' and 499 were dependents of 'insured persons,' leaving only 95 of the uninsured classes.

In respect of these new patients, after observation it was found that 60 per cent. were not suffering from active tuberculosis.

2,553 patients visited the dispensary during the course of the year, and registered 8,758 attendances, an average of over 3 per patient.

The total number of complete physical examinations made was 2,392, including 1,032 males, out of 3,097 attendances; 581 females, out of 1,868 attendances; and 779 children out of 3,793 attendances; giving an average of 1 every 3 visits for adults, and every 5 for children.

24·7 per cent. of the cases had been verified bacteriologically—41·3 per cent. of the males, 32·6 per cent. of the females, and only 2·2 per cent. of those

under 16 years of age. The details are tabulated below :—

Sputum Examination.	Number of Patients who attended the Dispensary during the Year 1923.				Ex-Service Men (included in the Total).
	Total.	Males.	Females.	Under 16 years of age.	
Bacilli found	631	413	197	21	194
Bacilli <i>not</i> found	1922	587	407	928	261
TOTAL	2,553	1,000	604	949	455

Sputum Positive Cases.—The number of living sputum positive cases on the Dispensary Register on January 1st, 1923, was 578 ; during the year 123 of these died, and also 78 patients in whose sputa tubercle bacilli were found in the course of the year.

255 cases were added to the register, making a total at the end of the year of 632, consisting of 434 males, (including 190 ex-service men), 182 females and 16 children.

499 of these patients visited the Dispensary during the year. Of the 133 who failed to attend 82 refused, 14 stated that they had no time, and 18 were unable for some other reason to come up for periodical examination.

84 of these were reported by the nurses to be working or fit to work, 16 were moderately well, while 14 had relapsed and were mostly bedfast : in respect of the remaining 19, no information could be obtained.

In 18 instances Sanatorium treatment had been refused, but 69 patients had been treated at Barrasford Sanatorium.

The year of the original booking of all the sputum positive cases is given in the following table :—

YEAR PATIENTS FIRST ATTENDED DISPENSARY.
(CASES WITH TUBERCLE BACILLI IN SPUTUM.)

1913.		1914.		1915.		1916.		1917.		1918.		1919.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
20	8	20	21	15	7	21	10	27	10	31	7	35	12

1920.		1921.		1922.		1923.		Total.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
65	19	47	13	65	50	93	56	439	193

“ Negative ” Cases.—The records of the patients in respect of whom no tubercle bacilli have been found in the sputum are filed separately from those of the sputum positive cases, and 1,922 patients in this category attended during the year. This number included 1,083 males (261 ex-Service men) and 839 females. The preponderance of male cases was nothing like so pronounced as in the sputum positive group, and it is noteworthy that children were much more numerous, constituting 48·2 per cent. of the total as opposed to 3·3 per cent. of the bacteriologically verified cases. While the majority of these “negative” cases were “suspects” or “contacts,” 811 had been notified as suffering from some form of tuberculosis. The details are set out below :—

“ NEGATIVE ” CASES WHO ATTENDED THE DISPENSARY DURING 1923.

Notified.	Males.	Females.	TOTAL.
Lungs	253	193	446
Glands	73	72	145
Abdominal	30	33	63
Joints	37	23	60
Bones	16	16	32
Spine	17	9	26
Skin	5	7	12
Disseminated.....	11	4	15
Genito-Urinary	8	..	8
Meninges	2	2	4
Not Notified	631	480	1111
TOTAL	1,083	839	1,922

The year in which the various patients first attended the Dispensary is given in the subjoined table:—

YEAR PATIENTS FIRST ATTENDED DISPENSARY.

1913		1914		1915		1916		1917		1918		1919	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
16	10	23	21	22	20	22	24	49	35	52	31	57	43

1920		1921		1922		1923.		TOTAL.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
105	71	123	97	220	164	394	323	1083	839

Relations with other Departments, etc.—The relations existing between the Dispensary and the medical practitioners of the City, the local hospitals and other agencies were, as in previous years, cordial and intimate.

The vast majority of new cases entered on the Dispensary Register were referred either directly by the local doctors (54 per cent.) or else by the visiting nurses after notification (37 per cent.).

In many cases it was considered that more appropriate treatment or advice could be given elsewhere, and 121 patients were given letters of recommendation to other departments, hospitals or charitable agencies.

Thus 66 cases were referred to the Voluntary Tuberculosis Care Council, 12 to the Maternity and Child Welfare Department, 10 to the Citizens' Service Society, 8 to the Royal Victoria Infirmary, 7 to the Dental Hospital, 5 to the United Services Fund and smaller numbers to the Local War Pensions Committee, the Principal School Medical Officer, the Fleming Memorial Hospital, the Maternity Hospital, Board of Guardians, etc.

41 patients were examined and reported on by the Consulting Radiologist during the year.

Every effort is made to verify each notified case by bacteriological means, and during the year 1,713 specimens of sputum were examined at the Dispensary.

Of this number 387 were found to contain tubercle bacilli, while 1,326 gave negative results.

In addition 602 samples of sputum were sent, for examination, to the College of Medicine by the medical practitioners of the City.

Of these 107 proved positive, and 495 negative.

Work of the Nurses.—934 new patients were seen as against 797 in 1922, and 11,969 subsequent visits were made, giving a grand total of 12,903 for the year.

2,630 of these visits were paid to ex-Service men.

The number of patients on the Nurses' lists on December 31st, 1923, was 2,361, comprising 941 males (including 374 ex-Service men), 597 females, and 823 children.

In 589 cases tubercle bacilli had been found in the sputum, and special attention has always been paid to these infective cases.

They are visited at least once monthly, and their contacts are kept under the closest possible supervision.

The Work of the Sanitary Inspector.—This officer disinfects houses after deaths or changes of address of consumptives, arranges for the removal and disinfection of phthisical patients' clothing and bedding, and reports on any insanitary conditions existing in the homes of dispensary patients, such as overcrowding, insufficient ventilation, or defective sanitary arrangements.

The details of his work were as follows :—

Houses visited	703
Houses disinfected (total)	687
For patients going to Sanatoria	122
For patients changing their address	92
For patients going to Hospital.....	310
After death	216
Rooms disinfected in above houses	740
Total number of visits	1145
Houses found to have sanitary defects (including overcrowding) and re- ferred to the Senior Sanitary In- specter	109

INSTITUTIONAL TREATMENT.

36 beds were provided at Barrasford Sanatorium for early or moderately advanced cases of pulmonary tuberculosis, 62 beds were available for more advanced or emergency cases at the Sanatorium Pavilions at the City Hospital, Walker Gate, while at Stannington Sanatorium 30 beds were maintained for the treatment of tuberculous children.

Barrasford Sanatorium.—93 patients (68 men and 25 women) were admitted in the course of the year. Three were “suspects” sent up for observation purposes; one of these patients was found to be suffering from malignant disease of the lungs. Four were suffering from pleurisy with effusion. Of the remainder 32 were classified at the Dispensary as being in Stage 1, 37 in Stage 2, and 17 in Stage 3.

100 persons completed treatment and were discharged during 1923.

The details as to “insured” and “uninsured” persons, males and females, together with the average length of stay in the institution, are submitted herewith :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM
DURING YEAR 1923.

	In Barrasford Sanatorium on 1st January, 1923.	Ad- mitted during Year.	Persons who completed Treatment during year.			In Barras- ford on 31st Dec. 1923.
			Number.	Total Number of Days.	Average Length of Stay in days.	
Uninsured Males ..	1	8	8	1128	141	1
Uninsured Females	4	13	13	1498	115	4
Insured Males	28	60	68	10004	147	20
Insured Females ..	4	12	11	1432	130	5
TOTAL	37	93	100	14,062	140	30

The results of treatment were satisfactory, and the condition of the patients on discharge was as follows :—

RESULTS.	Males.	Females.	TOTAL.
(a) Fit to Work	51	15	66
(b) Improved	18	5	23
(c) Without Improvement	7	3	10
(d) Died in Sanatorium .....	..	1	1
TOTAL	76	24	100

2 patients were re-admitted and are counted as 4 admissions.

Each discharged patient is visited at frequent intervals by one of the Dispensary Staff and is encouraged to report periodically so that he can be examined and records kept of his condition.

In the next table a summary is given of the condition on December 31st, 1923, of all the patients treated at the Corporation expense since 1908. It will be noticed that most of the earlier cases are returned as dead or untraceable :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM,
AND THE RESULTS.

YEAR.	Number of Patients discharged from Barrasford Sanatorium.	MALES.	FEMALES.	Condition at end of Year 1923.					Total Number of days in the Sanatorium.	Average number of days in the Sanatorium.
				Well, working or fit to work.	Improved or moderately well.	Relapsed.	Dead.	Lost sight of, or left the district.		
1909	55	34	21	3	5	..	37	10	6,260	114
1910	63	40	23	5	3	1	39	15	6,471	101
1911	72	46	26	13	3	..	47	9	6,868	97
1912	67	47	20	6	3	..	39	19	5,396	81
1913	85	58	27	13	3	..	46	23	9,567	112
1914	78	59	19	20	4	2	39	13	9,723	124
1915	74	54	20	14	4	..	35	21	10,803	146
1916	64	45	19	10	4	1	35	14	10,005	156
1917	68	45	23	17	6	..	31	14	10,603	156
1918	89	81	8	29	5	1	40	14	11,926	134
1919	107	85	22	36	8	4	48	11	14,207	133
1920	131	105	26	58	15	2	42	14	17,127	129
1921	112	88	24	46	10	4	46	6	13,544	122
1922	77	58	19	39	10	4	18	6	10,515	136
1923	100	76	24	70	18	1	10	1	14,062	140
TOTAL ..	1,242	921	321	379	101	20	552	190	157,077	126
Received treatment in previous years ..	62	43	19	22	7	2	25	6	..	..
Nett Cases	1,180	878	302	357	94	18	527	184	157,077	133

While the appearance of tubercle bacilli in the sputum indicates that there is active destruction of lung tissue, still it must be recognised that there is always a doubt about any case in which the diagnosis has not been verified bacteriologically.

Accordingly the bacterial history of each patient admitted to Barrasford Sanatorium has been investigated as thoroughly as possible, and the results are tabulated below :—

BACTERIAL HISTORY OF
PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM.

YEAR.	Persons discharged from Barrasford Sanatorium.				Persons deceased at the end of the year.				Cases who had Tubercle Bacilli in the Sputum and could not be traced at end of Year.
	TOTAL Nett Cases.	Number who had Tubercle Bacilli found in the Sputum.	Number who had <i>not</i> Tubercle Bacilli found in the Sputum.	Number who had Tubercle Bacilli found in the Sputum after discharge.	TOTAL.	Tubercle Bacilli found in the Sputum before or during treatment.	Tubercle Bacilli <i>not</i> found in the Sputum before or during treatment.	Tubercle Bacilli found in the Sputum after discharge.	
1909	55	35	20	2	37	30	6	1	1
1910	63	45	18	3	39	32	4	3	8
1911	67	45	22	6	43	35	4	4	5
1912	63	36	27	10	36	26	5	5	8
1913	81	52	29	3	45	36	6	3	10
1914	74	53	21	2	37	34	1	2	3
1915	73	51	22	3	34	29	2	3	8
1916	63	47	16	3	35	30	2	3	7
1917	64	42	22	5	28	23	2	3	7
1918	83	55	28	4	38	34	2	2	10
1919	102	82	20	4	46	45	..	1	7
1920	127	89	38	3	41	40	1	..	8
1921	106	84	22	4	42	38	2	2	4
1922	64	49	15	1	17	14	2	1	3
1923	95	77	18	..	9	9	..	..	..
TOTAL	1,180	842	338	53	527	455	39	33	89

The very heavy mortality experienced by the bacteriologically verified cases shows how serious is the finding of tubercle bacilli in the sputa of patients of the industrial classes.

STANNINGTON SANATORIUM.

The 30 beds were kept fully occupied throughout the year, and 37 patients completed treatment.

The details appear below :—

CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM
DURING YEAR 1923.

	In Sana- torium on 1st Jan., 1923.	Ad- mitted during the Year.	Persons who completed Treatment during the year.			In Sana- torium on 31st Dec. 1923.
			Number	Total Number of Days	Average length of stay in Days.	
Males	16	20	19	4,164	219	17
Females	14	17	18	6,648	369	13
TOTAL	30	37	37	10,812	292	30

In nearly every case great benefit accrued to the patient, as is shown in the following return :—

	Males.	Females.	Total.
(a) Much Improved	16	15	31
(b) Improved	1	3	4
(c) Without Improvement	2	..	2
(d) Worse .....	..	..	..
TOTAL	19	18	37

SANATORIUM PAVILIONS, WALKER GATE.

As in previous years, the 62 beds provided were fully occupied during 1923. 211 patients were admitted, and of these 62 were ex-Service men, 1 of whom was a pensioner residing in another district, whose maintenance fee was defrayed by the authority responsible for his admission.

Details of the number of patients admitted and the average length of stay in days are given in the accompanying table :—

PATIENTS WHO RECEIVED TREATMENT IN SANATORIUM PAVILIONS
AT THE CITY HOSPITAL, WALKER GATE, DURING YEAR 1923.

	Patients in Hospital on 1st Jan., 1923.	Patients Ad- mitted	Patients who have completed Treatment			In Hospital 31st Dec., 1923.
			Number	Total Number of days.	Average length of stay in days.	
Uninsured, Males	6	27	27	2,734	101	6
Uninsured, Females..	11	63	50	4,555	91	24
Insured, Males	35	104	107	10,694	100	32
Insured, Females	2	17	15	1,298	86	4
TOTAL	54	211	199	19,281	97	66

N.B.—4 patients were re-admitted and are counted as 8 admissions.

Specially noteworthy is the increase in the proportion of women admitted ; 80 out of the 211 admissions were female patients.

Whereas on January 1st, 1923, there were 41 men in residence and 13 women, on the 31st December, 1923, the respective figures were 36 and 28.

Treatment has been on Sanatorium lines, modified to some extent in view of the type of patient ; the essentials are the same, however, namely, rest and good food under satisfactory hygienic conditions, with exercise graduated to the patient's tolerance.

Collapse therapy was practised on a fairly extensive scale. Attempts to introduce an artificial pneumothorax were made in 33 instances, of which 29 were successful. In addition "refills" were given to 4 patients who had received their initial treatment elsewhere, and to 16 cases who had commenced treatment before January 1st, 1923.

The method has continued to give satisfactory results, but as explained last year, the majority of the cases treated at this institution are too advanced to give hopes of permanent cures.

46 patients, all of whom were residents of Newcastle, died in the institution; the condition of the other patients on discharge is given in the table below :—

	Males.	Females.	Total.
(a) Fit to Work	7	6	13
(b) Improved	71	31	102
(c) Without Improvement	25	13	38
(d) Died in Hospital	31	15	46
TOTAL	134	65	199

The various activities of the Tuberculosis Section have been summarised, and are set out on the following page, together with the corresponding figures for previous years.

TUBERCULOSIS SECTION.

ANNUAL SUMMARY OF WORK DONE.

	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913
<i>Notifications Total</i>	833	775	777	837	724	819	909	987	964	958	1246
Lungs	544	495	532	593	519	552	590	642	612	665	796
Other Forms	289	280	245	244	205	267	319	345	352	293	450
Notified by T.M.O. . .	170	175	167	213	145	221	244	162	146	180	140
<i>Deaths (Corrected) Total</i>	414	422	451	489	455	531	571	557	542	529	479
Lungs	311	322	348	368	339	393	411	417	380	375	326
Other Forms	103	100	103	121	116	138	160	140	162	154	153
<i>Attendances at Dispensary</i>	8758	9137	9783	12170	10332	11517	9286	7758	6473	6712	3656
New Patients	925	843	956	1074	819	904	969	850	899	1046	729
<i>Marlborough Sanatorium</i>											
Admitted	93	83	101	130	114	95	69	67	70	78	86
Discharged	100	77	112	131	107	89	68	64	74	78	86
<i>Stannington Sanatorium.</i>											
Admitted	37	38	42	46	45	48	55	74	65	78	17
Discharged	37	38	39	50	43	49	55	73	65	55	11
<i>Sanatorium Pavilions, Walker Gate.</i>											
Admitted	211	204	174	167	185	207	181	146	54	40	38
Discharged	153	157	124	113	125	151	138	89	38	27	16
Died	46	51	50	62	48	30	48	26	17	14	8
<i>Bacteriological Exams.</i>											
<i>College of Med... Total</i>	602	557	638	652	642	529	604	624	600	714	910
Sputum—Positive . .	107	105	148	171	134	129	159	172	147	202	207
Negative	495	452	490	481	508	400	445	452	453	512	703
<i>Dispensary Total</i>	1713	1861	1697	1827	1266	1080	957	708	608	764	354
Sputum—Positive . .	387	364	379	434	306	233	204	146	140	182	85
Negative	1326	1497	1318	1393	960	847	753	562	468	582	269
<i>Urine Examinations . .</i>	944	866	988	1107	832	812	806	681	272	..	..
<i>Evening Consultations.</i>											
Attendances	961	1005	1171	1759	1499	1455	1264	1180	1124	1000	546
New Patients	32	57	57	89	53	57	84	96	128	130	59
<i>Work of Nurses.</i>											
New Patients	934	797	793	712	393	463	336	505	1055	1306	799
Subsequent Visits . .	11969	10546	12077	13211	10976	9668	6188	7515	5429	6444	1235
Total Visits	12903	11343	12870	13923	11369	10131	6524	8020	6484	7750	2034
East District	2978	2800	3757	5752	4360	2993	2530	4050	3323	3729	..
West District	6106	5263	3978	5393	3244	4499	3777	3970	3161	3921	..
Central District	3819	3280	5135	2778	3765	2639	217	..	..	..	..
<i>Special Inspector's Visits</i>	1145	1022	1084	1077	962	933	1110	1070	1400	2385	1835
Houses Disinfected . .	687	542	539	519	461	504	554	537	512	549	514
Rooms Disinfected . .	740	596	588	625	526	557	701	619	779	1077	1089
Sanitary Defects — Houses	109	91	76	123	29	22	34	17	23	48	71

W. H. DICKINSON, M.D., M.R.C.P., Ed.,
Tuberculosis Medical Officer.

BARRASFORD SANATORIUM.

Report of the Medical Superintendent.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit a report of the work at Barrasford Sanatorium during the year 1923.

During this period, as in the previous two years during which the Sanatorium has belonged to the Newcastle-upon-Tyne Corporation, many additions and improvements have been made.

The provision of a duty room in the main block is of the greatest use and convenience, and helps considerably in the case of the bed patients, whilst the closing in of the lower open air veranda has given a most useful, warm and comfortable "Quiet Room," which is set aside primarily for letter writing, reading, etc., and for games requiring quietness and thought.

The Joint Council of the Order of St. John and the British Red Cross Society has provided most generously a billiard table with full equipment for the use of the patients. The table is much in demand, and affords great pleasure. Its use is controlled by a committee of patients.

Late in the year the Corporation kindly purchased for the Sanatorium a three-valve wireless set with a loud speaker, which is, of course, most valuable in providing entertainment.

A new and efficient X-ray plant has been installed by Messrs. X-Rays, Limited, of London. This is of the transformer type, with a "Radiator" Coolidge tube, and the set includes a combined screening stand and couch of excellent design and of great convenience. Both the radiographic and radiosopic results obtained seem to be excellent. The exposure necessary for radiography is between one-fifth and one-third of a second for an average adult chest, varying with the physique of the person.

As will be seen readily, an efficient X-ray plant is a great asset to the clinical work of the Institution. It is of especial value in treatment by artificial pneumo-thorax. By examining cases with the fluorescent screen the size and position of the pneumo-thorax can be ascertained, and more valuable still, the presence or absence of pleural adhesions binding the lung to the chest wall can be determined. It is by no means uncommon to find, when a lung is partially collapsed, a band or tape-like adhesion anchoring the base of the lung to the floor of the pleural space. Without X-ray examination it is impossible to diagnose accurately this condition, though it may be suspected. The positive X-ray evidence of such a state is invaluable, indicating obviously that a high pressure in the chest, in an endeavour to collapse the lung, must be avoided.

In diagnosis, the value of a radiograph of the lungs is of the greatest assistance. It cannot be said that a good radiograph is an absolute and simple guide to an accurate diagnosis. For instance, opacities due to healed tuberculous foci are seen at the roots of the lungs so frequently as to be regarded as normal, and small

areas of undoubted tuberculous disease, though possibly quite inactive and symptomless, are often seen elsewhere in the lungs of healthy people. The interpretation of radiographs requires experience of the normal appearances of what is abnormal though benign, and also of the pathological characteristics of the numerous diseases which may give rise to abnormal pulmonary X-ray shadows or opacities.

A radiograph of the lungs is taken of each patient shortly after admission, when examination by ordinary clinical methods has been completed. X-ray examination does not lessen the extreme value and importance of examination by clinical methods. Obviously, a radiograph gives valuable aid in deciding whether a given case is suitable—from a point of view of extent of disease—for treatment by artificial pneumothorax. It is constantly observed that the extent of disease as shown on a radiograph of any definite case, even one of early disease, exceeds considerably that indicated by the signs found on physical examination.

As previously, the library has been added to by gifts of books from the British Red Cross Society, and from numerous private individuals.

The social side of the patients' life has been carried on practically as in previous years.

No summary dismissal of patients has been necessary, and the general tone of the Sanatorium has been of the best.

Admissions.—The admissions to the Sanatorium during 1923 are set out below, and it will be seen that there is a considerable drop in this group as compared with 1921 and 1922, though the number admitted through the Newcastle Dispensary is 10 more than in 1922. This fall seems to be entirely due to the fact that no cases have been forthcoming from other Authorities to fill the 30 or more beds which, prior to 1922, were occupied by cases from the Northumberland County Council, who during 1923 sent 10 cases only, all of whom were ex-service men and pensioners. Other Authorities sent approximately similar numbers as in previous years.

ADMISSIONS TO THE SANATORIUM DURING 1923.

Authority.	Male.	Female.	Total.
Newcastle Corporation	68	25	93
Northumberland County Council	10	..	10
Gateshead Corporation	47	..	47
Tynemouth Corporation	1	7	8
West Hartlepool Corporation	20	14	34
South Shields Corporation	2	..	2
Durham County Council.....	..	2	2
Tynemouth Union	1	1	2
Armstrong, Whitworth's Employés' Medical Fund	1	1	2
Private Cases	4	2	6
Post Office Sanatorium Society	1	..	1
	155	52	207
During 1921	220	60	280
During 1922	212	55	267

DISCHARGES FROM THE SANATORIUM DURING 1923.

Authority.	Male.	Female.	Total.
Newcastle Corporation	76	24	100
Northumberland County Council	5	..	5
Gateshead Corporation	51	..	51
Tynemouth Corporation	1	7	8
West Hartlepool Corporation	24	15	39
South Shields Corporation	1	..	1
Durham County Council.....	..	2	2
Tynemouth Union	2	1	3
Armstrong, Whitworth's Employés' Medical Fund.....	1	1	2
Private Cases	5	2	7
Post Office Sanatorium Society	1	..	1
	167	52	219
During 1921	212	62	274
During 1922	229	65	294

SUMMARY OF MOVEMENTS OF PATIENTS DURING 1923.

Authority.	In residence night of Dec 31st, 1922.	Admitted during 1923.	Dis-charged during 1923.	In residence night of Dec. 31st, 1923.
Newcastle Corporation.....	37	93	100	30
Northumberland County Council ....	..	10	5	5
Gateshead Corporation.....	14	47	51	10
Tynemouth Corporation	2	8	8	2
West Hartlepool Corporation	8	34	39	3
South Shields Corporation .....	..	2	1	1
Durham County Council	1	2	2	1
Tynemouth Union.... ..	2	2	3	1
Armstrong, Whitworth's Employés' Medical Fund.....	1	2	2	1
Private Cases	1	6	7	..
Post Office Sanatorium Society .....	..	1	1	..
	66	207	219	54

The results of treatment are based on the discharged, that is completed cases.

Amongst a considerable number of doubtful cases admitted to the Sanatorium for the purpose of diagnosis 29 cases (23 male, 6 female) were discharged as not suffering from pulmonary tuberculosis, and whilst included in the number 219, given above, they are excluded when considering the results of treatment. The non-tuberculous cases consisted mainly of those of chronic bronchitis, with some of bronchiectasis, sequels of wounds of chest, and of gas poisoning.

Only three of the observation cases sent from the Newcastle Dispensary proved to be non-tuberculous.

Some of the details of the 190 definite cases who completed treatment during the year, are set out under :—

SOCIAL STATUS.

	Male.	Female.	Total.
Single	54	23	77
Married	86	22	108
Widowers	4	..	4
Widows .....	..	1	1
	144	46	190

AGE.

Years.	Male.	Female.	Total.
16—20.....	14	13	27
20—25.....	20	6	26
25—30.....	34	14	48
30—35.....	27	9	36
35—40.....	14	4	18
40—45.....	16	..	16
45—50.....	14	..	14
50—55.....	5	..	5
	144	46	190

OCCUPATIONS OF 144 MALE CASES.

Engineering and Metal Workers.....	38
Labourers	32
Miners	10
Managers and Clerks	10
Insurance Agents (outside) and Commercial Travellers	7
Railway Porters	4
Tramway Employés	3
Painters	3
Gas Workers	3
Joiners	3
Blastfurnace Men	2
Seamen	2
Shoemakers	2

and one each of the following occupations :—

Plumber, Barman, Cartman, Baker, Glass-blower, Salesman, Cinema-operator, Collector, Lamplighter, Dental Mechanic, Waterman, Wood-turner, Stage Hand, School Teacher, Bricklayer, Telephone Operator, Tailor's Cutter, Butcher, Laboratory Assistant, Salvation Army Officer, Prison Warder, Store-keeper, Ships Steward, Mat-maker, and one youth had no occupation. TOTAL—144.

OCCUPATIONS OF 46 FEMALE CASES.

Housewives	22
Domestic Servants	7
At Home (single)	3
Factory Hands	3
Shop Assistants	2
Barmaids	2
Clerks	2

and one each of the following occupations :—

Messenger, Dressmaker, Farm Worker, Photographic Printer, Probationer Nurse.—TOTAL—46.

42 Cases (37 male, 5 female) were re-admissions.

The average duration of treatment of all cases was 119·5 days.

The average length of stay of the 100 Newcastle completed cases was 140·6 days, the 76 males staying 146·4 and the females 122 days.

The longest stay made by any completed case was 701 days, and the shortest was 5 days.

The average length of treatment is longer than in 1922, when it was 101·4 days.

Many factors operate in producing a comparatively short average period of residence. First comes the general unwillingness of patients to stay longer than three months, and it is strange how firmly it is engrafted in popular opinion that "three months in a Sanatorium is all that is required." Patients are often compelled to return home by financial or familial difficulties. Others fail to take advantage of treatment offered, and prolonged residence is not recommended.

More important than all these is an unwillingness on the part of the average patient to regard his condition with sufficient gravity. Although advised that they are unfit for work, many patients will leave the Sanatorium simply because, feeling well, and having no symptoms excepting perhaps slight cough, they ignore advice and regard themselves as fit. In the majority of cases the result is inevitable breakdown. Similarly, many men leave the institution without having the least prospect of obtaining employment, as they prefer an idle aimless life in the town to the orderly well regulated régime of a sanatorium. Perhaps this point has been somewhat laboured, but it is one that is not sufficiently recognised—namely, that the unwillingness of patients to co-operate fully with the physician, and their neglect to observe a few principles in ordinary post-sanatorium life are responsible for a large number of relapses which make the course of active pulmonary tuberculosis so costly in health and in lives.

The average number of beds occupied daily during the year was 68, the average for males being 51.7 and that for females 16.3. The total number of patient days was 24,822, divided into male 18,873, and female 5,949.

Below is given an analysis of the average number of beds occupied and the patient-days :—

Authority.	Average Beds Occupied.	Patient Days.
Newcastle Corporation	35·43	12,935
Northumberland County Council	2·09	765
Gateshead Corporation.....	10·8	3,944
Tynemouth Corporation	1·99	728
West Hartlepool Corporation	11·23	4,098
South Shields Corporation	0·46	166
Durham County Council	0·8	289
Tynemouth Union	0·68	251
Armstrong, Whitworth Employees' Medical Fund	1·805	659
Private Cases	2·24	819
Post Office Sanatorium Society	0·46	168

The diagnosis of pulmonary tuberculosis was confirmed bacteriologically either before admission or during residence in 154 cases ; 119 males, 35 females.

62 patients, 46 males and 16 females, were apparently without tubercle bacilli in the sputum, and 1 male and 2 females said they had no expectoration.

655 sputum examinations were made at the Sanatorium during the year, and of these 180 were positive and 475 negative.

968 complete physical examinations of the chest were made during the year, together with routine examinations of the larynx and the urine on the admission of patients, and subsequently when necessary.

An attempt has been made to estimate the average length of time which had elapsed between the onset of symptoms and the admission of the patient to the Sanatorium. This is very difficult to do, being vitiated by the re-admitted cases and by the statement of patients that they had had slight symptoms, such as morning cough, for years. However, taking the time of onset of marked symptoms, which the patient could

not have ignored, such as definitely increased cough and spit, hæmoptysis, weakness, loss of weight, etc., the period elapsing between their being noticed first and the patients' admission to the Sanatorium seems to be not less than 12 months on the average.

Treatment.—Of the 190 tuberculous cases discharged, 33 seemed suitable for treatment by artificial pneumothorax, but in 6 males and 5 females changes in the chest, causing obliteration of the pleural space, prevented the measure being employed. Artificial pneumothorax treatment depends for its success on placing at absolute or relative rest the lung which is the seat of the process causing the symptoms. The type of case most likely to benefit is one with extensive active disease throughout one lung, but uncomplicated by pleural adhesions, with freedom from disease in the other, but this variety is very rarely (? never) found. At the best, one finds inactive disease in the other lung, but the presence of a limited amount of active disease in the “sound” lung does not necessarily contra-indicate the induction of a pneumothorax.

In one case still in the Sanatorium, and not included in these figures, a simultaneous bilateral minimal pneumothorax was induced, with considerable (? temporary) improvement in health.

During the year the types of cases recommended for artificial pneumothorax can be divided into three classes :—

1. Those with gross, mainly one-sided, disease, in whom satisfactory healing was never likely to occur, even if the general conditions were good and toxæmia absent.

2. Those who had persistent systemic disturbance in spite of routine treatment, and in whom the disease was mainly unilateral.
3. In cases of severe and dangerous pulmonary hæmorrhage, regardless of the extent of disease, when the lung which was the seat of the hæmorrhage could be ascertained with a fair degree of certainty, as can usually be done.

In 22 cases (16 males and 6 females) a pneumothorax was induced ; of the former, 7 were right sided cases and 9 left sided, whilst amongst the 6 women, 5 were right and 1 left sided. In inducing and maintaining these pneumothoraces, 167 inductions of air were performed.

During treatment 7 of the cases developed an effusion of fluid on the side of the pneumothorax. This is a comparatively unimportant complication in the large majority of cases in which it occurs—other workers in this form of treatment record an incidence percentage of 50 or thereabouts.

In 11 of the 22 cases the treatment failed to control symptoms, and after a fair trial it was abandoned. In the other 11, however, excellent results were obtained, the general health being very considerably improved, and more important, the more grossly diseased lung was put at rest and therefore in the best circumstances for healing, whilst distressing symptoms, such as violent cough and profuse sputum, were relieved.

It will be seen that the number of cases suitable for artificial pneumothorax is not large, and that of those in whom it would seem to be indicated a considerable number have pleural changes which prevent

this form of treatment, and further, a proportion of those in whom a technically perfect pneumothorax has been induced failed to benefit, although no definite physical signs of active disease were present in the "sound" lung. Nevertheless, this form of treatment is of the greatest value for a small proportion of cases, and it has a definite and permanent place in the armamentarium of the tuberculosis physician.

The propriety of utilising artificial pneumothorax-therapy in the early cases, before there is gross dissemination of the disease in the lungs, is undoubted, instead of, as is most usual, reserving it for far advanced cases in whom the outlook is very grave. But against this is the extreme difficulty of inducing patients with slight symptoms to realise the seriousness of the disease, and as long as they improve in general condition, they are as unwilling to submit to the slight discomfort of this treatment as to believe that without it the local condition does not improve to any extent in three or six months. On the other hand, cases with more extensive disease seem willing to accept without much persuasion any form of treatment which they are advised is likely to help them.

In the last two months of the year, the new X-ray plant was used extensively in the screening of all cases of artificial pneumothorax at each refill. This means of visualising the actual intra-thoracic physical conditions is obviously of the greatest value and importance, showing, as it does, the actual amount of collapse of lung gained, and the presence or absence of pleural adhesions, which constitute the greatest difficulty in the successful performance of this form of treatment.

A series of cases was treated with Raw's Bovine Tubercle Vaccine, the work being done in co-operation with Dr. Nathan Raw, who arranged for the supply of sufficient vaccine to treat 12 cases. Other varieties of tuberculin have been used extensively in this Sanatorium in the past, without any definite benefit being observed. The theory underlying the use of the Tubercle Vaccine mentioned above is that human and bovine tubercle bacilli are antagonistic to each other, and a mild infection of the one type in the human body may produce an immunity to the other. Cases of pulmonary tuberculosis, which are always due to the human type of bacillus, are treated with a vaccine produced from bovine bacilli which are said to have been rendered avirulent by sub-culture for a very long period. It was not anticipated that any marked improvement would result immediately, and all the patients treated progressed as one expected they would as a result of routine treatment. What is looked for is that active immunity will be stimulated and that the spread of disease may be limited, and that subsequently fibrosis of the diseased foci may result instead of the more usual relapse and steady spread of disease. The patients treated will be communicated with from time to time, and from their after histories some estimate of the value of the vaccine may be ascertained.

Routine treatment has been continued as previously, much greater stress being laid on the ensuring of rest for the patient than on any other factor. Graduated labour as such has been abandoned. The procedures such as artificial pneumothorax, the newer operations of thoracoplasty (*i.e.*, the severance of the ribs at their spinal and breastbone attachments, allowing the chest wall to fall in and collapse the lung), the

division of the nerve which controls the movement of the diaphragm, and the still more recent attempts at lung splinting, all act when successful by resting the diseased lung, and it hardly seems rational in view of this knowledge to treat patients by even “graduated” labour, entailing as it must do increased and more frequent respiratory efforts and therefore increased work for the damaged part.

In winter the patients’ cubicles, recreation and dining-rooms, have been kept warm, and the patients made as comfortable as possible in this direction. Nothing but good was found to follow this modification of sanatorium treatment.

As in the past, great stress has been laid on the body temperature of the individual patient. Pyrexia in pulmonary tuberculosis indicates progressive disease, and in all cases febrile patients have been kept in bed and at rest. A normal temperature is the foundation of success in treatment.

Results of Treatment.—As in the past, the immediate results of treatment have been excellent. The table below shows the details of the total 190 definite cases who completed treatment:—

	Male.	Female.	Total.
Fit for Work.....	57	27	84
Improved	50	7	57
Without Improvement	22	8	30
Worse	15	3	18
Died in Institution .....	..	1	1
	44	46	190

The results of treatment so far as the 100 Newcastle-on-Tyne discharged cases alone are concerned, are as follows :—

	Male.	Female.	Total.
Fit for Work.....	33	14	47
Improved	25	4	29
Stationary	9	2	11
Worse	7	2	9
Died .....	..	1	1
Not Tuberculous	2	1	3
	76	24	100

The weight records of the 190 definitely tuberculous completed cases, and those of the 29 non-tuberculous, are as follows :—

		Gained 1 to 7 lbs.	Gained 7 to 14 lbs.	Gained over 14 lbs.	Remained station- ary.	Lost 1 to 7 lbs.	Not weighed on discharge.	Total.
190 definite cases.	Gained weight..	59	79	30	..	..	..	168
	Lost weight....	..	..	..	..	18	..	18
	Stationary ....	..	..	..	2	..	..	2
	Not weighed on discharge....	..	..	..	..	..	2	2
Total.....		59	79	30	2	18	2	190
29 non tuber- culous cases.	Gained weight..	17	9	..	..	..	..	26
	Lost weight ..	..	..	..	..	2	..	2
	Not weighed on discharge ...	..	..	..	..	..	1	1
Total.....		17	9	..	..	2	1	29

As in the past, it must still be admitted that the results of treatment reviewed at the end of, say, two years, will be very different from those immediately at the termination of institutional treatment. Doubtless many cases will succumb to the disease, and others will

relapse, but just so surely a proportion will be found who will maintain their improved health and working capacity, but in whose cases the disease would have been progressive but for sanatorium treatment.

There is still no specific cure for pulmonary tuberculosis, and treatment consists of placing suitably selected cases under such hygienic conditions as will aid the natural resistance of their tissues in dealing with the disease. It seems tolerably certain that infection takes place in childhood in the great majority of cases, and lies practically dormant indefinitely (occasionally showing itself here and there as a pleurisy or a febrile attack probably called "influenzal," which subsides quickly and is forgotten), until some factor is introduced which causes the disease to light up and become progressive. What that factor is cannot be said, but some changed condition either in the body reactions or in general environment, allows the pre-existing infection to triumph over the resistance. The bulk of the cases of pulmonary tuberculosis, excluding those of acute type, seem to occur between the ages of 25 and 35 years, and the vast majority of cases occur amongst the classes who are more poorly paid, housed and fed. A case having developed, he is sent for treatment to the sanatorium, where he is placed under the best procurable conditions (so far as Barrasford is concerned), and in the large proportion of cases apparent health is restored, but in the length of time that patients usually will consent to stay, healing of the diseased foci in the lungs has not occurred, and he or she returns to precisely the same conditions under which a pre-existing dormant infection had so comparatively recently become active. The sanatorium should not be said to have failed.

Much more is being done now in the way of after-care of the tuberculous, perhaps more in Newcastle-upon-Tyne than elsewhere, but it is here that the biggest cause of failure lies, and the work of the sanatorium is not harvested. At the Cambridgeshire Tuberculosis Colony at Papworth, under the direction of Dr. Varrier-Jones, cases of tuberculosis of the lungs, in the main similar to the class of case passing through Barrasford, are, after sanatorium treatment, if morally and temperamentally suitable, offered work in the various shops and lodged in hostels, and in some cases in houses, and it is found that under the conditions of good housing in their home life, and relief from stress and strain in the workshops, that they maintain their health and are useful members of society. From Barrasford, the cases too often return to bad conditions and relapse.

The writer is looking forward anxiously to the day when Newcastle-upon-Tyne will give a lead to other municipalities and establish a tuberculosis colony for its cases who leave the sanatorium. It is only in this way that, so far as one can see, the tuberculosis problem can be solved, and even so the sanatorium must remain as an essential part of the equipment in the onslaught against consumption.

I feel that the most excellent work of the Matron should be brought to notice, and my thanks are due to her for her assistance throughout the year.

Yours faithfully,

CECIL G. R. GOODWIN,
Medical Superintendent.

*Barrasford Sanatorium,
March 1st, 1924.*

**REPORTS OF THE VETERINARY OFFICER
AND INSPECTOR OF PROVISIONS,
AND OF THE INSPECTOR UNDER THE FOOD AND
DRUGS ACTS (SENIOR SANITARY INSPECTOR),**

V.—FOOD.

**BOVINE TUBERCULOSIS.
INSPECTION OF MEAT AND PROVISIONS.
INSPECTION OF FOOD AND DRUGS.**

**BOVINE TUBERCULOSIS,
AND THE INSPECTION OF MEAT
AND PROVISIONS
AND FOOD AND DRUGS.**

TUBERCULOUS MILK, 1923.

Eight samples of milk were reported to be tuberculous during the year. The affected milks were from farms in Newcastle (1), Northumberland (2), Durham (1), Cumberland (1), Dumfriesshire (2), North Riding of Yorkshire (1).

In five of the herds concerned one or more cows were found diseased or in a suspicious condition. In three of these cases check samples proved negative. In two, check samples could not be obtained, as in one the farmer ceased to send milk to the City, while in the other an outbreak of foot and mouth disease led to the destruction of the entire herd.

In one instance clinical examination of the herd did not reveal any diseased animal. It was reported, however, that one cow had been discarded after the original sample was taken, and as a further sample was negative, it would seem that this animal was the source of the mischief.

In one case the sample taken as a check on a supply which was found to be tuberculous in 1922, when one cow was excluded from the herd. On a second examination two more animals were found affected and also removed. In another case the supply was originally found tuberculous, and stopped by the Sunderland Medical Officer of Health, but as the milk was also coming to Newcastle, it was stopped in this City also. As a result three cows were excluded, but a check sample taken in Newcastle was found tuberculous. A second examination revealed three more animals affected. Further check samples in both of these instances were negative.

The following statement shows the percentage of milks found to be tuberculous each year since the institution of the bacteriological tests in 1906.

Year.	Percentage of Samples found Tuberculous.
1907	5.9
1908	3.8
1909	9.0
1910	5.4
1911	3.0
1912	10.4
1913	8.4
1914	6.7
1915	5.8
1916	8.7
1917	3.1
1918	2.9
1919	3.6
1920	6.3
1921	5.5
1922	7.0
1923	4.5

INSPECTION OF MEAT AND PROVISIONS.

Report of the **Veterinary Officer, Inspector of Meat, etc.**

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit herewith my Report upon that portion of my duties which fall within the scope of the public health administration.

Diseases of Animals Acts, 1894-1914.

During the year under report, 8 outbreaks of contagious disease (as defined by the Acts) occurred amongst the animals within the City, as compared with 25 the previous year.

The Dairies, Cowsheds, and Milk Shops Orders, 1885-1899.

Within the City there are 25 cow-keepers, who occupy 39 cowsheds on 26 premises, and possess a total of 484 milch cows. During the year 143 visits were made to the cowsheds and dairies for the purpose of inspecting the buildings, and the conditions as to cleanliness, etc.

Bovine Tuberculosis.

Dairy herds within the City have been examined from time to time, although neither as often nor as regularly as one would desire. Towards the latter part of the year an outbreak of Foot-and-Mouth Disease, which

attacked live stock on premises scattered over a considerable area, rendered it necessary temporarily to suspend visiting the dairy farms except for the purpose of Foot-and-Mouth Disease or the Orders regulating it. Of the animals examined for diseases likely to affect the milk supply directly, ten were found with acute or chronic conditions affecting the udder. In two of the latter the condition was tuberculosis. One of these animals was disposed of by slaughter, the other being placed under isolation. In both of these cases, and in others where necessary, the milk supply was promptly suspended as from the outset.

TABLE NO. 1.

DISEASED COWS FOUND IN REGISTERED PREMISES WITHIN THE CITY.

Year.	No. of Cow-keepers.	No. of Registered Cowsheds.	No. of Dairy Premises.	No. of Milch Cows in City.	No. of Diseased Cows.				
					Tuberculosis		Other Diseases		Destroyed.
					Of Udder.	Other than Udder.	Udder.	Other than Udder.	
1909	41	..	..	527	5	2	4	1	5
1910	38	41	..	503	1	1	8	..	1
1911	37	44	38	497	1	..	4	..	1
1912	37	44	37	465	2	..	1	..	..
1913	31	43	33	489	2	2	..	..	..
1914	31	43	33	510	1	1	1	..	..
1915	31	43	33	554	3	..	6	..	..
1916	30	44	32	536	2	2	12	..	1
1917	30	44	32	512	1	..	..	..	..
1918	29	43	31	622	..	..	..	..	..
1919	27	41	29	594	..	..	..	..	..
1920	26	40	28	565	..	..	..	..	..
1921	25	38	26	575	..	..	..	..	..
1922	25	39	26	489	..	..	..	..	..
1923	25	39	26	484	2	..	8	..	1

Rabies.

During the year under report one case of suspected Rabies affecting an Airedale Terrier was reported.

The animal, upon examination by the Veterinary Officer, was found to be suffering from an attack of distemper.

Within Great Britain during the years 1920, 1921 and 1922, 41, 22 and 1 cases occurred, respectively. With the exception of one case affecting a horse, all the animals attacked were dogs. The outbreaks referred to occurred within 14 separate counties.

TABLE No. 2.

NUMBER OF ANIMALS EXHIBITED WITHIN THE NEWCASTLE CATTLE MARKET.

Year.	Cattle.	Calves.	Sheep.	Swine.	Cows.
1887	110,074	8,780	325,473	28,964	—
1897	99,084	7 304	340,382	31,798	—
1908	87,447	8,145	302 608	38,466	—
1909	85,110	6,950	323,780	31,189	—
1910	77,347	6,469	306,703	27,089	—
1911	70,337	5,841	305,418	37,754	—
1912	48,222	4,646	227,046	32,562	—
1913	63,683	4,455	271,887	27,468	—
1914	55,617	4,376	258,976	26,507	—
1915	53,689	3,677	248,291	25,062	—
1916	52,251	980	248,356	23,796	—
1917	47,906	1,192	216,920	15,474	—
1918	32,948	42	201,071	148	—
1919	33,664	329	145,613	89	—
1920	32,577	2,064	129,606	5,923	—
1921	35,000	1,765	210,000	1,154	—
1922	21,921	1,432	140,389	16,521	278
1923	28,828	1,665	138,447	5,545	99

Animals Slaughtered for Food.

During the year 1923, 123,283 animals were slaughtered within the City, as compared with 139,202 slaughtered the year previous. It will be seen, according to the following table, that of the animals slaughtered, with the exception of sheep, all classes showed a considerable increase as compared with the number of each class in the previous year. Past history concerning sheep

indicates considerable fluctuations as to numbers within the country during each decade. The number of these animals was considerably reduced by the slaughter of ewes on account of high prices during the early years of the great war. As to the numbers of breeding stock there is, however, every indication of a recovery ; and as Northumberland is the largest sheep-breeding county within Great Britain, the North country, and this district in particular, may confidently anticipate an ample supply of the best home fed mutton within the near future.

TABLE NO. 3.

ANIMALS SLAUGHTERED ON LICENSED PREMISES WITHIN THE CITY.

YEAR 1923.	1922.	1921.	1920.	1919.
Horses 1,487	888	1,131	456	674
Cows 603	16,284	15,740	19,977	25,151
Heifers.... 9,876				
Bulls 229				
Bullocks .. 6,233				
Calves 3,945	2,847	3,221	2,347	3,561
Sheep 69,190	88,902	91,951	61,024	75,483
Pigs 31,720	30,281	17,819	17,540	14,595
Total Animals ... 123,283	139,202	129,862	101,344	119,464

Live Stock and Meat Supplies.

It will be observed, according to Table No. 2, that the total number of cattle and sheep exposed within the Market during the year exceeded that of the previous year by 4,965. Although the sheep exhibited were 1,942 fewer, the cattle were in excess of the previous year by 6,907, notwithstanding the fact that the Market was unavoidably closed during several weeks of the year on account of foot-and-mouth disease. In the

same table it is indicated that the pigs exhibited were fewer in numbers as compared with the previous year to the extent of 10,976. The number of pigs exhibited within the market is not by any means a correct indication of the number dealt with within the City, for thousands of these animals are licensed from the lairs direct to slaughterhouses within and without the City without entering the Market. The trade in pigs within the district gives promise of being a gradually increasing one, and there is every indication that so soon as modern facilities (at present under consideration) are completely in operation for the purposes of not only dealing with live animals, but also for slaughtering on a large scale, full advantage will be taken by the traders concerned to meet the demands of a large and increasingly populous district.

TABLE NO. 4.

Cattle, Calves and Pigs Slaughtered within the City. (See also Table No. 8.)	Number of Animals found Diseased, Unsound or otherwise unfit for Human Consumption.		*Number of Animals found Tuberculous.	
	Whole Carcasses Condemned.	Parts or Organs Condemned.	Whole Carcasses Condemned.	Parts or Organs Condemned.
Year 1923.	Year 1923.			
Cows 603	25	47	24	47
Heifers 9,876	26	41	20	26
Bulls 29	2	3	2	1
Bullocks 6,233	16	29	12	16
Totals 16,941	69	120	58	90
Calves 3,945	63	..	4	..
Pigs 31,720	47	14	15	9

* The figures representing the numbers of animals found tuberculous on slaughter do not necessarily indicate the total number of animals affected with disease, because under the present slaughter-house system it is impossible to guarantee that all those slaughtered are subjected to inspection.

The Inspection of Meat and Other Foods.

During the year 1923, a total of $312\frac{1}{4}$ animal carcasses, together with 10 tons 17 cwts. 3 qrs. 2 lbs. of meat (excluding offal, etc.) were condemned within the City and destroyed as being unfit for human consumption, as compared with $237\frac{1}{4}$ animal carcasses and 1 ton 14 cwts. 1 st. 10 lbs. of meat condemned and destroyed the year previous.

Of the $312\frac{1}{4}$ carcasses, $77\frac{1}{2}$ (76 carcasses and 6 quarters) were condemned on account of tuberculosis, as compared with $82\frac{1}{2}$ (79 carcasses and 14 quarters) the previous year.

Of the total number (excluding mutton) of carcasses, parts of carcasses and organs condemned as unfit during the year under report, tuberculosis was found to be the cause in 176 or 56·23 per cent. of the cases as compared with 168 or 67·74 per cent. the previous year. Of the bovine animals slaughtered, as indicated in Table No. 4, the cow-class will be seen to exhibit by far the greatest percentage of cases of tuberculosis, 10·11 per cent. of those slaughtered being wholly or partly condemned on account of that disease. Although the above particulars clearly indicate the percentage of bovines found tuberculous under the present system of slaughtering and inspection, they cannot be accepted as any indication of the number or percentage of animals actually affected. Were these animals slaughtered at one central establishment and subjected to complete inspection, a large number of diseased parts and organs would be excluded from the market which under the present system it is impossible to detect.

TABLE No. 5.

CARCASSES OF BEEF CONDEMNED WITHIN THE CITY DURING THE
PAST FOURTEEN YEARS.

Total Condemned.		Numbers condemned on account of Tuberculosis.	Percentage Tuberculous.
Year.	Carcasses.	Carcasses.	Per Cent.
1910	116	110	94.82
1911	88	79	89.77
1912	79	73	92.40
1913	92	89	96.73
1914	83	70	84.43
1915	96	88	91.66
1916	109	103	94.49
1917	98	92	93.87
1918	230	182	79.13
1919	306	267	73.0
1920	193	171	86.36
1921	90	78	86.66
1922	85	79	92.94
1923	69	58	84.05

NOTE.—The above refers to whole carcasses and quarters, but does not indicate the total animals found tuberculous, and therefore does not include those carcasses in which only the organs or parts were found diseased and condemned. See Table 4.

TABLE No. 6.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1923.

Slaughter Houses.	Central Markets.			Meat Shops.		Fish Shops.		Provision Shops.		Fruit Shops.		Quayside.		Cold Stores.	Goods Stations.	Sausage Factories.	Bacon Factories.	Food Preparing Factories.
	Meat and Provisions.	Fruit and Vegetables.	Fish Shops.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Wharves and Vessels.	Fish Market.					
1,987	621	494	469	4,020	873	56	15	91	10	108	40	466	10	29	7	5	1	3

Imported Foodstuffs.

During the year 1923, 182 vessels carrying foodstuffs from Denmark, Holland, Norway, America, Canada and Australia arrived at the Quayside, as compared with 200 vessels during the year 1922. 466 visits were made to the wharves and vessels alongside, 1,495

packages containing meat, etc., being opened and examined. Regarding these visits, 17 were in response to official notices received from the Customs House concerning foodstuffs detained for inspection and certification.

Imported meat arriving within the City by rail is subjected to inspection and supervision within the wholesale shops and cold storage depôts.

Foreign Meat, etc., arriving by Vessel.

Fresh Meat (carcasses, etc.):

343 Pork, 220 Mutton and Lamb, 1,014 Veal, 25 Casks Pork and 392 Sides Beef.

Offal (casks).

PIGS—6,311 Feet, 2537 Maws, 721 Tongues, 599 Heads, 16 Plucks and 2 Kidneys.

CALVES—10 Plucks, 200 Cow's Udders.

Chilled Meat (carcasses, etc.).

4,451 Mutton and Lamb, 11,581 Quarters, and 1,908 Crops of Beef.

PACKAGES.—412 Cut Mutton and 2,374 Shin Beef.

Offal (packages).

BEEF—1,042 Hearts, 1,141 Tails and 738 Skirts.

Frozen Meat (carcasses, etc.).

77,548 Mutton and Lamb, 300 Pork and 94,622 Quarters Beef.

BEEF—9,331 Crops.

PACKAGES.—2,555 Cuts, 889 Legs, and 394 Shin.

MUTTON—265 Legs, 175 Loins, 215 Shoulders and 1,110 Cuts.

PORK—1,286 Loins, 168 Neck Ends and 100 Cuts.

Boneless Beef.

* 6,978 packages.

* 4 tons 9 cwts. 3 lbs. Boneless Beef condemned.

Offal (packages).

BEEF—1,911 Hearts, 1,123 Tails, 1,844 Skirts, 50 Callops, 2,875 Livers, 4,399 Kidneys, 1,076 Cheeks, 2,775 Tripe, 1,770 Tongues, 350 Offal and 697 Suet.

SHEEP—839 Hearts, 440 Kidneys and 676 Sweet-breads.

Salted Meat.

20 barrels of Pork and 6 casks of Beef.

Other Goods (cases, etc.).

67,056 American Bacon and Hams, 379,676 Sides Danish Bacon, 17,648 Tinned Meat, 154 Sausages and 32 Sausage Skins.

TABLE NO. 7.

NUMBER OF VESSELS AND ORIGIN, ARRIVING WITH FOOD.

Denmark.	Holland.	Norway.	America.	Canada.	Australia.
113	19	1	24	22	3

The following foodstuffs, condemned as unfit for human consumption, were permitted to be used for animal feeding, namely :—

764 tins Corned Beef. 144 tins Milk.

72 tins Mutton. 72 tins Fruit.

108 tins Beef and Tongue.

Total Weight of Meat and other Foodstuffs Condemned.

The approximate total weight of meat and other foodstuffs condemned during the year was 55 tons 1 stone 8 lbs., comprising :—

Beef, Mutton, Veal, Pork.—28 tons 11 cwts. 4 st. 10 lbs.

Offal, Provisions, etc.— 26 tons 8 cwts. 4 st. 12 lbs.

TABLE NO. 8.
CARCASSES, ETC., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION DURING THE YEAR 1923.

	Carcasses				Lungs			Hearts	Kidneys		Livers		Tails	Heads			Plucks		Tongues		Feet		Ox Skirts	Cow's Udders	Sheep Sweetbreads		
	Beef	Veal	Mutton	Pork	Sets Ox	Sets Sheep	Sets Pig	Ox	Ox	Sheep	Ox	Sheep	Ox	Calves	Sheep	Pig	Ox	Sheep	Calves	Ox	Calves	Ox	Pig	Ox			
Tuberculosis . . .	58 + 6 qrs.	4	..	14	82	..	3	12	2	..	30	..	1	..	17	7	..	..	..	..	..	..	1	..	..	..
Jaundice . . . . .	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Catarrh . . . . .	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pleurisy . . . . .	..	..	1	..	9	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Pneumonia . . . . .	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Peritonitis . . . . .	..	1	..	..	..	..	..	4	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pericarditis . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Cirrhosis . . . . .	..	..	..	..	1	..	..	1	2	..	1	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..
Septic Conditions	5	..	2 + 3 qrs + 13 lbs.	2	2	..	..	1	..	..	8	..	..	..	1	..	..	2	..	..	..	..	..	..	..	..
Abscesses	46 lbs.	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oedema and Emaciation)	2	..	11	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pyrexia . . . . .	..	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Asphyxia . . . . .	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Immaturity . . . . .	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Traumatism	1 + 184½ lbs.	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Congestion and Imperfectly bled)	1	..	4	8	4	..	6	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Decomposition . .	2 + 4 qrs. + 10 tons 10 cwt. 2 qrs. 1 st. 4 lbs. (including 4 tons 9 cwt. 3 lbs Boneless Beef)	60 + 197 lbs.	95 + 194 lbs.	23 + 160 lbs.	19	76 + 34 lbs.	..	753	199	220 lbs.	18 lbs.	82 + 145 lbs.	56	100	23	179	118	312	12,100	..	12	1366 lbs.	384 lbs.	667 lbs.	405 lbs.

TABLE No. 9.

POULTRY, GAME, FISH, FRUIT AND PROVISIONS, ETC., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION DURING THE YEAR 1923.

Cause of Unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions.
Unsound or Unwholesome.	1 Turkey. 7 Chickens.	21 lbs. Findon Haddocks. 126 lbs. Cod.	3,400 lbs. Apples. 26 barrels Pears.	TINNED GOODS. Tins. Tomatoes 117
	120 Ptarmigan. 139 Rabbits.	454 lbs. Haddocks. 6 lbs. Rock Turbot. 578 lbs. Herrings. 336 lbs. Fish (mixed) and 35 Trout, 9 cases.	20 barrels Grapes. 56 baskets Cherries. 69 baskets Raspberries. 124 Chips Bilberries. 295 chips and 53½ bushels Black Currants.	Vegetables 10 cases + 168 Fruit (mixed) 1768 Veal Loaf 42 Pork & Beans 120 Tripe 48 Milk, 10 barrels + 162 Egg Pulp 6 Pilchard in Tomatoes 3½ cases. Sardines, 12 cases. 146 Salmon 24 Herring Norwegian Fish 300 Cray Fish 7,104 lbs. Ox Tongue 380½ Corned Beef 6,997 + 6 cases.

Slaughter Houses.

During the year under report there were 102 separate premises licensed for slaughtering purposes within the City. Within six of these no other animals than horses are slaughtered, the carcasses being exported for human consumption on the Continent. The total number of slaughter-houses is made up of five groups, together with ten separate establishments situated in various parts of the City. Owing to the Scotswood Road group having a drainage system difficult to control and being situated immediately over a group of licensed pig and cattle lairs, the cleansing and disinfection of the latter have been rendered from time to time almost impossible of achievement. It is scarcely necessary to add that the whole of the slaughter-house arrangements within the City from the points of view of meat inspection, sanitation, and the prevention of contagious animal diseases cannot be considered satisfactory. It should be noted, however, that the provision of modern slaughtering accommodation in conjunction with new markets and lairages is at present under consideration, whilst repairs within the Market as a temporary measure are rapidly approaching completion.

I have the honour to be, Sir,

Your obedient Servant,

THOMAS PARKER, F.R.C.V.S.,

*Veterinary Inspector and
Inspector of Meat, Provisions, etc.*

Town Hall,

Newcastle upon Tyne,

16th July, 1924.

FOOD AND DRUGS ADULTERATION, Etc.

Total Samples.—The number of samples of all kinds obtained for analysis during the year was 1,147 (against 1,306 in 1922), of which 235 were taken informally. For details see table on page 185A.

Of this total, only 598 were submitted for analysis to the Public Analyst, the remainder being milk samples which, on being tested in the Health Department, appeared to be genuine.

Milk Samples.—Milk again takes premier position, the number of samples being 895. 48 of these were certified to be below the minimal limits fixed by the "Sale of Milk Regulations, 1901," and 2 contained formaldehyde as a preservative.

Samples not Genuine, etc.—The percentage of all samples not genuine to the total number taken was 4.53 (compared with 4.75 for the previous year), and the percentage of non-genuine milk samples to the total number of milk samples obtained was 5.59 (as against 4.86 in 1922). The total number of samples taken was at the rate of 4.04 per 1,000 of the population (estimated) of the City for the year 1923. This is in excess of the number suggested by the Ministry of Agriculture (viz., 3 per 1,000 of the population).

Milk Adulteration.—Of the 50 milk samples not genuine, 15 were deficient in non-fatty solids, 31 in milk fat, and 2 in both, whilst, as mentioned above, 2 contained formaldehyde.

The percentage of fat deficiency varied from 1·6 to 25·0 (the average being 8·35), and of solids not fat from 2·7 to 15·0 (average 8·36).

Margarine Act, 1887.—31 samples of margarine (included in the foregoing total of 1,147) were purchased and analysed. Two contained a slight excess of water, and all contained boric acid (as below).

Margarine Warehouses.—69 visits were made to margarine warehouses. Some thousands of packages were examined as regards the proper marking, and all found to comply with the Act.

Preservatives in Food.—Of the total number of samples taken for analysis (1,147) the following were certified to contain preservative in the form of boric acid :—margarine (31—all below the limit allowed), butter (2—both within the permissible limit), rice cake (1—equal to 11·9 grains per lb.), and frozen and liquid white-and-yolk of egg (which is largely an ingredient of these and similar cakes), 1 sample each, which contained respectively 3·5 and 84·7 grains per lb. In these latter cases the results were communicated to the Ministry of Health, who are pursuing the matter generally.

Five samples of British wines contained salicylic acid, in amounts varying from 0·1 to 1·7 grains per pint. With regard to these no action was taken by the Health Committee.

Two samples of milk (from one vendor) contained formaldehyde, at least 1 part in 100,000, and, as any preservative whatever is prohibited in milk, the seller was summoned and fined £2 in each case.

Samples taken for Analysis during the Year 1923.

ARTICLE	No. of Samples obtained.		Result of Analysis.			Action taken.			REMARKS.		
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Doubtful.	Prosecu- tions.	Convic- tions.		Cases Dismissed.	
New Milk	893	2	895	845	50	..	26	20	6	1 of those deficient was an "informal" sample in respect of which no proceedings were taken, and in 23 cases the vendors were cautioned by order of the Health Committee.	
Dried Milks	5	5	5	The 2 samples "not genuine" (which were "in- formal" and "formal," from the same vendor), contained 1.9 and 0.7 per cent respectively of excess water. The vendor was cautioned by order of the Health Committee. All the samples contained undeclared preservative (viz., boric acid—under 0.5 per cent).	
Dried Milk and Virol	1	1	1	..	..	..	..	..
Condensed Milk	10	10	10	2	29	..	..	..
Margarine	6	25	31	..	..	..	..	..	..
Butter	1	35	36	34	..	2	The 2 "doubtful" samples contained boric acid (below 0.5 per cent.).	
Coffee	1	1	1	2 of the samples contained boric acid, equal to 3.5 and 84.7 grains per lb, respectively. Results reported to Ministry of Health.	
Cocoa	1	1	1	..	..	..	..	..
Tea	1	1	1	..	..	..	..	..
Sugar	1	1	1	..	..	..	..	..
Flour	1	1	1	1 of the samples ("Rice Cake") contained boric acid equal to 11.9 grains per lb. Result reported to Ministry of Health.	
Egg Powder	1	1	1	..	..	..	..	..
White and Yolk of Egg (frozen and liquid)	..	5	5	5	..	..	..	..	..
Slab Cake (Rice, etc.), Sponge Cake, Biscuits & "Fingers"	..	18	18	18	..	..	..	..	..
Self-raising Flour (including Bun Flour, etc.)	..	6	6	6	The 2 "doubtful" samples were of jam (black- currant and raspberry), which contained copper (0.028 and 0.021 grains per lb.) and tin (0.91 and 0.41 grains per lb.). These were Australian jams, and the matter was taken up with the manu- facturers' agents in London.	
Blancmange Powder	1	1	1	..	..	..	..	..
Mustard Powder	5	5	5	..	..	..	..	..
Baking Powder	7	7	7	..	..	..	..	..
Corn Flour	1	1	1	The samples contained 0.83 to 3.44 grains of tin per lb. This result was communicated to the Ministry of Health, at whose request the samples were taken.	
Semolina	3	3	3	..	..	..	..	..
Rice	1	1	1	..	..	..	..	..
Ground Rice	10	10	10	..	..	..	..	..
Ground Ginger	5	5	5	5 of the samples contained salicylic acid in amounts varying from 0.1 to 1.7 grains per pint. No action taken by Health Committee.	
Ground Almonds	2	2	2	..	..	..	..	..
Arrowroot	1	1	1	..	..	..	..	..
Pepper	17	17	17	..	..	..	..	..
Mustard	3	3	3	The samples contained 0.83 to 3.44 grains of tin per lb. This result was communicated to the Ministry of Health, at whose request the samples were taken.	
Vinegar	2	2	2	..	..	..	..	..
Jams and Jellies	2	5	7	5	..	2	..	..	..
Golden Syrup.....	..	1	1	1	..	..	..	..	..
Tinned Tomatoes	6	6	6	The samples contained 0.83 to 3.44 grains of tin per lb. This result was communicated to the Ministry of Health, at whose request the samples were taken.	
British Wines.....	10	..	10	10	..	..	..	..	..
Cream of Tartar	7	7	7	..	..	..	..	..
Cream of Tartar Substitute.....	..	4	4	4	..	..	..	..	..
Tartaric Acid	7	7	7	The samples contained 0.83 to 3.44 grains of tin per lb. This result was communicated to the Ministry of Health, at whose request the samples were taken.	
Tincture of Rhubarb	5	5	5	..	..	..	..	..
Syrup of Rhubarb	6	6	6	..	..	..	..	..
Gregory Powder	5	5	5	..	..	..	..	..
Paragoric	4	4	4	The samples contained 0.83 to 3.44 grains of tin per lb. This result was communicated to the Ministry of Health, at whose request the samples were taken.	
Olive Oil	2	2	2	..	..	..	..	..
Glycerine	5	5	5	..	..	..	..	..
Sweet Spirits of Nitre.....	..	3	3	3	..	..	..	..	..
White Precipitate Ointment..	..	4	4	4	The samples contained 0.83 to 3.44 grains of tin per lb. This result was communicated to the Ministry of Health, at whose request the samples were taken.	
TOTALS	912	235	1,147	1,056	52	39	26	20	6		Amount of Penalties obtained—£59.*

Included in the above are :—

7 "appeal to cow" samples taken at farm or byre, after seeing the cows milked; all proved to be genuine.

45 samples taken "in course of delivery" (at railway stations, etc.).

In addition, 24 miscellaneous samples (taken for informative purposes only, and not under the Food and Drugs Acts), were submitted to the Public Analyst for examination.

12 samples of assorted Mineral Waters were also obtained (informally) and forwarded, on request, to the Ministry of Health for special examination.

* Total penalties, including those in respect of "Offences other than Adulteration," etc., (£4, see separate table, page 185), £63.

ACTION TAKEN WITH RESPECT TO OFFENCES OTHER THAN
ADULTERATION.

OFFENCE.	NO OF CASES.	PROCEEDINGS TAKEN, ETC.
<i>Sale of Food and Drugs Act, 1899, Sec. 9 :—</i> Selling milk from cans upon which the name and address of the vendor were not inscribed.	4	Vendors cautioned.
<i>Margarine Act, 1887, Section 6:—</i> Margarine delivered to purchaser in paper not marked "Margarine."	4	Vendors summoned and fined 20s. in each case.
TOTAL	8	Amount of Penalties, £4.*

*See also † on page 185A.

THE PUBLIC HEALTH (MILK AND CREAM) REGULATIONS,
1912 AND 1917.

MINISTRY OF HEALTH TABLE.

1.—Milk and Cream not sold as Preserved Cream.

	(a) Number of samples examined for the presence of a pre- servative.	(b) Number in which a preservative was reported to be present.
Milk	355	2 (contained formaldehyde, see page 184).
Cream	— (No	— Samples.)

2.—Cream sold as Preserved Cream. No samples.

BACTERIAL IMPURITY OF MILK AND WATER.

Milk.—178 samples were examined by the Bacteriologist for the presence of tubercle bacilli, which were found in 8, or 4·5 per cent.

Action taken is described on page 169.

177 samples were examined for evidence of excremental pollution, which was found to an undesirable degree in 28, or 16 per cent. The vendors and producers were communicated with and warned, further samples being taken in each case.

Cleanliness of Milk Churns.—In order to secure as far as possible a thoroughly clean milk supply for the City, 19,675 empty milk churns, awaiting return to the farmers, were examined at the various railway stations in the City, and of this great number only 95 (from 25 different dealers) were found in an uncleansed condition. In each case the offender was warned by the Medical Officer of Health.

While this work occupies a considerable amount of time, it is fully justified by the results, for last year of 8,985 churns examined 230 were found uncleansed.

Water.—180 samples were collected from all parts of the City and at the water works, and examined for the presence of *bacillus coli*.

The results are described on page 118.

PREMISES ON WHICH FOOD IS PREPARED.

Bakehouses.—There are in the City 242 bakehouses, of which 26 are factories and 216 workshops.

These are kept under rigid and systematic supervision, and are generally found in good order. The number of contraventions is small, and these are usually dealt with by the Inspector at the time, or by informal notice or letter.

98 of the workshop bakehouses are of the “ domestic ” order, that is where the occupier of a dwelling herself makes “ home made bread ” on a small scale for sale amongst her neighbours. Even in this case the requirements of the law are enforced, and the practice discouraged as far as possible. They do, however, meet a want in some neighbourhoods and, as a rule, they are kept in a condition to compare favourably with more pretentious premises.

Restaurant Kitchens (which include cafés and dining rooms) number 118. These are also regularly inspected, any insanitary conditions (which as a rule are few) being dealt with as in the case of bakehouses above mentioned.

Fried Fish Shops.—The number of these increased from 137 to 147 during the year. For comments see “ Offensive Trades ” (page 198).

Ice Cream Manufacturies and Retail Shops.—During the year 87 applications were received for permission to make and/or sell ice cream, which was refused in 39 cases, in many on account of the fact that the cream was to be made in or sold from dwelling houses. In others, general insanitary conditions, lack of water supply, drainage, facilities for cleansing, and the storage for sale of vegetables and other goods of a dusty or dirty nature, led to the applications being declined. In many cases where permission was refused it was regarded as a hardship, but a commodity like ice cream is so susceptible to contamination that a high standard must be fixed and rigidly adhered to.

The premises of both manufacturers and dealers are regularly inspected, and it is worthy of note that only a few contraventions of a minor nature have been found.

The number of manufacturers on the register is 123, and of those who sell but do not make, 100.

Milk Shops.—At the close of the year there were 568 retail milk-shops in the City, including 32 belonging to 9 larger dairy companies. Of the total, 97 were shops in which only dairy products and like commodities were retailed, and 271 were shops selling other articles, whilst the remaining 200 sell a sterilised milk in stoppered bottles.

A considerable number of applications for registration as milk purveyors were received from occupiers of dwelling-houses. In all cases these were refused, as it is felt that such an important food stuff cannot with safety to the consumer be kept under such conditions.

C. RAIMES,

*Inspector under the Sale of
Food and Drug Acts, etc.*

Health Department,

Town Hall,

30th June, 1924.

REPORT OF THE
SENIOR SANITARY INSPECTOR.

VI.—THE HOME AND THE
WORKSHOP.

NUISANCES, HOUSING, FACTORIES AND
WORKSHOPS, Etc.

**NUISANCES, HOUSING,
FACTORIES AND WORKSHOPS,
ETC.**

**The following is the
Report of the Senior Sanitary Inspector.**

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have the honour to submit the following report on the work carried out in my section of the Health Department during the year ended December 31st, 1923. Since being appointed Senior Sanitary Inspector in April of that year, a re-arrangement of the districts has been made, as it was found that with the increasing work and responsibilities of the Inspectors several of the districts were too large to enable the duties to be carried out in the most efficient manner. Previously there were nine districts, from four of which a portion was taken and a new district formed, thus dividing the City into 10 sections, each under the charge of an Assistant Inspector. On the other hand, the number of Common Lodging Houses in the City having somewhat decreased, it was deemed advisable to take one Inspector from that work and place him in charge of the newly formed district, thus leaving the supervision of such houses to one Inspector instead of two as formerly.

NUISANCES.

The nuisances reported upon and dealt with during the year numbered 8,226, and ranged from a complaint made by the occupant of a large house in Jesmond, who stated that the person opposite to her was “always washing clothes and hanging them in the side garden to dry, and as my drawing room window looks into the garden it is most objectionable,” to the inevitable choked W.C. or drain, a question which is always with us more or less. In respect of the latter, there is, however, a slight decrease on the previous year, viz., 663, as compared with 836. This is largely due to the influence of the District Inspectors who, in dealing with choked drains, which they attribute to carelessness on the occupiers’ part, place the responsibility of clearing them upon the occupiers.

The following are the numbers of notices and letters issued during the year :—

Total number of notices served :—

Informal	6,185	
Statutory	211	
	———	6,396
Number of letters sent		2,664
Number of circular letters sent		1,400
		———
Total		10,460
		———

Overcrowding.

This question remains a very serious and difficult problem.

Overcrowding still exists to an extent which is not generally known, a very great number of persons being anxious to get larger houses, but while willing to pay the high rents charged for them, are unable to obtain them.

In one case, a man, his wife, and five children were found occupying one small room, the cubic contents of which, according to the Tenement By-laws, was only sufficient for two persons. In another sub-let room of a four-roomed upstairs flat were a man, his wife, and 10 children, the ages of the latter ranging from 18 months to 22 years. One more—a man, his wife, and 5 children were evicted by order of the County Court and their furniture placed on the public street. They ultimately took possession of a shed in a garden, without the consent of the owner, and they still remain there. Such cases could be stated twenty-fold, but those quoted will be sufficient to show how very acute the situation is. The District Inspectors have spent much time in interviewing house agents with a view to obtaining other accommodation in deserving cases.

Another aspect of the question is that where a room or rooms have been sub-let in flat property, perhaps for a month or two until the people can look around for a larger house, the month or two has in many cases exceeded three or four years.

In some instances, with a view to “speeding the parting guest,” and making things as uncomfortable as possible, the person who has sub-let will not allow his tenants to pass through the rooms to the back yard where the sanitary convenience, water supply and drain are situated. This again takes up much of the District Inspectors’ time in endeavouring to make peace between the two parties, in which, as a rule, they are successful. When everything else fails, a notice is served or a letter sent to the occupier (as “owner,” or person receiving the rent), to provide a drain, water supply, W.C. and dust-bin for dry house refuse. This has, as a

rule, the desired effect of opening doors and giving free access to such conveniences. Only in two cases out of many has it failed, and it is doubtful if either the Health Committee or the Magistrates would make an order in the circumstances.

Increase of Rent and Mortgage Interest (Restrictions) Acts, 1920 and 1923.

During the year only two applications were received from tenants for certificates that their houses were not "in all respects reasonably fit for human habitation or otherwise not in a reasonable state of repair." In both cases the certificates were granted. It is somewhat surprising that the number is so small for a large industrial city, and this can only be accounted for by the people being unaware of such important provisions.

Magisterial Proceedings.—Considering the total number of letters sent out and notices served (10,460) it is worthy of note that it was only necessary in four cases (one owner) to take legal proceedings. The magistrates ordered the work to be executed, which was done, and the summonses withdrawn, the defendant paying costs. In other 29 cases in which proceedings were ordered by the Health Committee, the necessary work was carried out without the issue of summonses. This reflects much credit upon the staff, who at all times, even after proceedings are ordered, are ready with advice and assistance in having the work carried out. For details see page 202.

Conversion of Dry Closets.

During the year 234 privies were removed and water-closets provided instead. Of this number 175 were pail-closets, 2 privy ashpits and 57 " cell " privies, a type of sanitary convenience common to the districts of Benwell and Walker, and an undesirable legacy received when these districts were incorporated with the City.

In addition, 103 " dry " ashpits were removed and the regulation galvanised iron dust-bin provided instead.

In connection with these removals, 366 dust-bins were supplied by the Corporation free of charge.

Every help and guidance is given to owners, every forbearance shown, and not until all efforts have failed is recourse had to the Health Committee. Seeing that Section 9 of the Public Health Acts Amendment Act, 1907, which provides that the Local Authority may pay the whole of the costs of conversion of a pail-closet, and half of the cost of converting a privy-ashpit, is not in force in the City, the whole of the expense must be borne by the owner ; and in many cases (more especially in that of an owner occupier who is unemployed) some hardship is involved. In such cases, however, the Health Committee lend a sympathetic ear, with the result that legal proceedings have only been ordered in 16 cases, and the work in these instances was done without the cases coming before the Magistrates.

On the other hand, it must not be forgotten that such conversions considerably enhance the value of the property, in addition to the general well-being of the occupiers.

RETURN OF “ DRY ” CLOSETS IN THE VARIOUS WARDS OF THE CITY.

WARDS.	Total No. Privies.	Pail Closets.	Cell Privies.	Privies and Ashpits.	
				Privies.	Ashpits.
St. Nicholas'	7	7	..	..	..
St. Thomas'	24	24	..	..	..
St. John's	37	37	..	..	..
Stephenson	14	14	..	..	..
Armstrong	7	7	..	..	..
Elswick	66	66	..	..	..
Westgate	6	6	..	..	..
Arthur's Hill .....	..	..	..	..	..
Benwell	54	..	51	3	2
Fenham	53	11	13	29	20
All Saints'	141	141	..	..	..
St. Andrew's	50	50	..	..	..
Jesmond	5	..	..	5	5
Dene	1	..	..	1	1
Heaton	32	25	..	7	7
Byker	822	822	..	..	..
St. Lawrence	1497	1494	..	3	3
St. Anthony's	577	559	..	18	17
Walker	917	..	868	49	33
Total in City	4,310	3,263	932	115	88

Atmospheric Pollution.

Smoke Abatement.—This form of nuisance unfortunately keeps well in evidence, despite the efforts of the staff to minimise it. In many cases the cause is found to be, or the nuisance arises from, the inferior quality of coal used, insufficient boiler power, and/or careless and unskilled firing.

The following table gives the details of this work :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance for periods of over 5 minutes in the aggregate during one hour.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecu- tions.
				Informal.	Statutory	
102	721	9	25	23	..	..

In one case fumes of an objectionable nature were traced to a factory, and an informal notice was served on the occupier to abate the nuisance. He was also interviewed by your Inspector, and carried out certain suggestions which it is hoped will prevent the recurrence of the nuisance. Unfortunately neither our local Acts nor Public Health statutes give power to deal with such a case.

Atmospheric Pollution Records.—An observation station, under the immediate control of the City Analyst, is placed on an open site in Davison's Yard, City Road, in connection with similar stations in other towns, the monthly results from all of which are compared and published by the National Committee for the Investigation of Atmospheric Pollution.

The monthly readings from the Newcastle station are appended:—

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1923.

MONTH.	RAINFALL. (Millimetres.)	METRIC TONS OF DEPOSIT PER SQUARE KILO- METRE PER MONTH.								
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.		
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as SO ₃	Chlorine as Cl.	Ammonia as NH ₃
January	24.9	0.14	3.71	5.19	0.90	2.14	12.08	1.20	0.25	0.08
February	71.4	0.34	3.50	6.18	1.57	3.57	15.16	1.81	0.69	0.18
March	31.1	0.70	3.72	5.00	0.75	1.87	12.04	1.18	0.29	0.04
April	57.9	0.28	5.02	9.93	2.08	3.83	21.14	1.53	0.58	0.09
May	59.7	0.40	5.00	9.46	2.15	3.34	20.35	2.01	0.55	0.09
June	23.9	0.33	3.06	7.94	0.57	2.29	14.19	0.98	0.22	0.04
July	40.2	0.66	7.26	15.56	1.37	4.42	29.27	2.11	0.46	0.14
August	91.0	0.21	3.76	7.96	1.64	4.00	17.57	2.06	0.45	0.13
September	35.0	0.49	5.21	8.22	0.91	2.59	17.42	1.30	0.27	0.06
October	48.0	1.53	10.03	11.53	1.25	3.94	28.28	2.21	0.44	0.08
November	96.0	2.95	51.06	27.55	1.92	8.26	91.74*	3.69	0.99	0.14
December	59.7	0.56	18.32	19.91	2.15	4.77	45.72*	2.93	0.40	0.11
Total, 12 months	638.8	8.59	119.66	134.43	17.26	45.02	324.96	23.01	5.59	1.18
Average per month	53.2	0.72	9.97	11.20	1.44	3.75	27.08	1.92	0.47	0.10

* The figures for these months are altogether abnormal. The deposit was composed largely of grit which was discharged in exceptional quantities from the chimney of a large works in the immediate neighbourhood of the gauge.

An average of 27·08 metric tons of total solids per square kilometre per month is equivalent to 1 *ton* 6 *cwts.* *per acre per annum*, or 832 *tons per square mile*. This is the highest deposit since the observations were commenced in 1914. The previous highest was in 1916, when the fall was equivalent to 694 *tons per square mile*.

CINEMAS, THEATRES, AND OTHER PLACES OF PUBLIC ENTERTAINMENT.

At the end of the year there were in the City 2 Theatres, 3 Music Halls, 27 Cinemas, and 64 miscellaneous places of public entertainment.

Nine applications for certificates of sanitary fitness (which are required by the Licensing Justices before a licence is granted or renewed) were received.

Of that number 6 were granted on the first inspection, and in 3 cases certain alterations or improvements were required and carried out before they were granted.

All such places are regularly visited during the day, and very frequently at night while the entertainment is in progress.

OFFENSIVE TRADES.

Fried Fish Shops.—In October it was decided by the Health Committee that instead of the District Inspectors making verbal enquiries of occupiers of premises in the vicinity of proposed fried fish shops as to their having any objection or not to such proposal, a letter (which was drafted by the Town Clerk) be sent. This is the practice now carried out, and it is found to work satisfactorily, the greatest advantage being that written replies are obtained, instead of verbal statements.

Fried fish shops constitute by far the greatest number of "Offensive Trades" in the City. They are under close supervision (inspections being frequently made at night, when the business is in progress), and, generally speaking, are kept in good sanitary condition. Ten new premises were opened, which brings the number up to 147.

Other Trades.—One soap-boiler and one rag and bone dealer ceased business and their names were removed from the Register.

The following offensive trades were carried on within the City :—

Specified in Section 112, Public Health Act, 1875 Bone Boilers (4), Soap Boiler (1), Tripe Boilers (6).

Declared by Local Authority, confirmed by Local Government Board (in accordance with Section 51 Public Health Acts Amendment Act, 1907). Rag and Bone Dealers (19), Dealers in Hides and Skins (4), Dealer in blood or other putrescible animal products (1), Fat Melters or Fat Extractors (3), Glue and Size Makers (2), Gut Scrapers (2), Fish Friers (147).

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES
WERE SERVED DURING 1923.

Foul privies and ashpits (to replace with water-closets).....	8
Defective " cell " privies in Walker and Benwell (to replace with water-closets).....	63
Foul pail-closets (to replace with water-closets).....	329
Foul or defective ashpits not connected with privies (to remove and provide dust bins)	87
Insufficient water-closet or privy accommodation (additional water-closets ordered)	16
Defective or insufficient dust bins	1479
Defective water-closets	735
Defective pail-closets (to repair, provide new pails, etc.).....	126
Water-closets without water supply	75
Choked water-closets (mostly served on tenants).....	104
Dirty water-closets (all served on tenants)	98
Dirty privies (all served on tenants)	14
Defective drains (to repair, or construct new drains).....	178
Insufficient means of drainage.....	1
Choked drains, etc.	559
Defective or choked sinks, waste pipes, etc.	284
Defective or choked soil-pipes, vent shafts, etc.....	22
Sink waste-pipes not trapped	31
Want of or defective pavement in yards and passages	190
Dirty rooms	42
Dirty bedding.....	5
Damp rooms	205
Overcrowding	29
Dirty yards, passages, stairs, etc.	232
Animals, pigeons, and fowls improperly kept	81
Offensive accumulations	103
Accumulations of manure	51
Want of or defective manure pits	8
Broken roofs and want of or defective or choked spouting	999
Want of water	295
Smoke nuisances	23
Want of proper ventilation to rooms (including to floor space), broken window cords in tenements, etc.	328
Structural defects in houses (broken plaster, floors, stairs, etc.).....	1235
Cisterns supplying water to sinks, etc., dirty or defective.....	9
Slop water or excreta thrown into privy pails, ash-tubs or dust bins ..	6
Filth thrown on yards, streets, etc.	4
Stable (defective and unsuitable)	5
Food manufactured or stored for sale under improper conditions.....	34
Ice creamery—In dirty condition	1
Bakehouses—Dirty, etc.	66
Council (and other) Schools—Defective or insufficient dust bins	14
Foul ashpit	1
Defective W.C.	1
Cellar dwellings illegally occupied.....	7
Unclassified minor nuisances	43
TOTAL	8,226

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF
NUISANCES AND TO INSPECTIONS MADE DURING 1923.

Length (in yards) of old drains removed	1,294
Length (in yards) of new drains constructed	1,903
New trapped gullies provided to drains	228
Combined privies and ash-pits removed	{ privies
	{ ash-pits
“ Cell ” privies removed (in Walker and Benwell)	57
Pail-closets removed	175
Defective water-closets removed	48
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 15 cases where the accommodation was previously insufficient)	296
Dry ash-pits removed and replaced by galvanised iron dust bins....	103
Dust bins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets	‡366
No. of drains tested.....	657
No. of tests of above drains made by smoke and water.....	833
No. of inspections from complaints made at office (verbally or by letter).....	1,912
No. of tenement inspections made	20,576
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	\$1,426
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice	5,031
Inspections to learn if works ordered were in progress.....	12,658
Supervisions of work in progress	2,300
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing of same	26,197
Inspections after infectious disease.....	749
Inspections of milk shops and ice creameries (including retail shops)	1,087
„ bakehouses	†1,245
„ offensive trades	651
„ wholesale margarine warehouses	69
„ as to limewashing of tenements	5,072
„ of schools	104
„ under Housing, Town Planning, etc., Acts	1,075
Miscellaneous Visits.....	1,785

‡ Dust bins supplied free by Corporation.

§ In addition to this number, the District Inspectors have daily had premises cleansed on verbal order.

† Including 828 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1923.

NATURE OF COMPLAINT.	No of Cases.	RESULT.	
		Work done and Nuisances abated without the Summonses being applied for.	OTHERWISE DISPOSED OF.
<i>Public Health Acts :—</i>			
Defective Drains.	1	..	Summons issued and afterwards withdrawn on work being done; costs paid by defendant.
Water storage cistern in dirty condition.	1	..	Do.
Stable floor defective.	1	..	Do.
Rain fall-spout acting as drain ventilator and otherwise defective.	1	..	Do
Sink waste-pipes.	1	1	
Woodwork of scullery sink dilapidated and foul.	1	1	
Roof defective	1	1	
Accumulation of refuse. .	1	1	
<i>Public Health Act, 1875, Sec. 36, and Newcastle-upon-Tyne Improvement Act, 1892, Sec. 53 :—</i>			
Houses without sufficient water-closets; (defective w.c.'s to be repaired, furnished with adequate water supply, etc.)	3	3	
Foul privies (pail-closets, "cell" privies, etc., to be replaced by water-closets).	16	16	
Carried forward	27	23	4

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1923.—*continued.*

NATURE OF COMPLAINT.	No. of Cases.	RESULT.	
		Work done and Nuisances abated without the Summonses being applied for.	OTHERWISE DISPOSED OF.
Brought forward ..	27	23	4
<i>Public Health Acts Amendment Act, 1890, Sec. 22 :—</i>			
Sanitary accommodation in workshops, etc. :—			
(a) Insufficient ;	2	2	
(b) Unsuitable or defective.	1	1	
<i>Tenemented House By- Laws—</i>			
Defective water-closets (No. 16).	1	1	
Dirty rooms (No. 24) floors, walls & ceilings) (No. 32).	1	1	
No water supply for domestic use (No. 34).	1	1	
TOTAL	33	29	4

HOUSING.

That the problem of finding houses is by no means less acute than in previous years is shown by the following return :—

CITY ENGINEER'S CENSUS OF UNOCCUPIED HOUSES.

Class of House.	Nov., 1912	Aug., 1914	Nov., 1917	Nov., 1918	Nov., 1919	Nov., 1920	Nov., 1921	Nov., 1922	Nov., 1923
Self-contained	306	137	40	29	43	39	57	93	99
Flats (each Flat counted as a separate dwelling).	903	75	..	..	1	4	11	35	26
House and Shop combined	68	29	1	2	..	..	4	9	4
Tenemented Houses	28	3	..	..	..	..	1	..	..
Total	1,305	244	41	31	44	43	73	137	129

Effect of Bad Housing.—Reference has already been made to the effect of bad housing and overcrowding upon the public health. It is of interest to summarise some of the points. Speaking generally, the Wards with the highest populations per acre have also the highest death rates. The converse does not always hold, as some Wards, such as Walker, may have small densely-packed areas scattered about among wide stretches of open space or farm land. The rates in these will be relatively high. But where the dwellings are evenly distributed and in good sanitary condition, and the population on area is low, the death rate is also low.

Thus the highest death rates from all causes are in All Saints' Ward (17·0), and St. Andrew's Ward (16·1), and the lowest in Dene and Fenham Wards (8·1 and 9·4 respectively), which occupy respectively also the opposite ends of the scale in regard to quality of housing, and density of population (see table on pages 51 and 58).

Similarly infantile mortality generally follows the same rule, and the Wards with the highest wastage of child life are again the most crowded ones. Thus St. John's Ward had an infantile mortality rate of 148 deaths per 1,000 births, All Saints' 120, Stephenson 113, Byker 112, and Armstrong 111, as compared with rates of 52 and 70 in Heaton and Arthur's Hill Wards respectively.

Over a period of sixteen years, the deaths per 1,000 births in one room, two room, and three room houses have been respectively 142, 122 and 103, and in the year under report were 110, 111 and 74.

In the case of tuberculosis one sees again the influence of congestion and bad houses in the fact that the highest mortality for the year was in Stephenson (2·27), St. Lawrence (2·07), Walker (2·00), St. Andrew's (1·99), while the lowest incidence occurred in Jesmond (0·56) and St. Thomas' (0·61).

The tuberculosis death rate for the whole City in 1923 was 1·46 per 1,000 population. In the two areas which have been scheduled during the present year, (1924) "Percy Street," and "Lower Pilgrim Street," the death rates were respectively 2·2 and 6·8, whereas the attack rates were 3·7 and 14·6 respectively, as compared with 2·9 for the whole City.

Again, about 33 per cent. of the population live in one and two room houses, yet nearly 38 per cent. of the deaths from consumption were among these.

Housing and Town Planning Acts.

Under these Acts 1,075 visits have been made by the District Inspectors during the year, and much good work has been carried out. On the other hand, there is quite a number of houses which would have to be practically rebuilt in order to put them into a thoroughly sanitary condition. In many cases, however, the owners are anxious to get rid of the tenants so that the houses may be converted into business premises. In such circumstances only the most necessary work is carried out. In a number of instances, although the premises may not be insanitary, they lack many of the conditions which are conducive to comfort and happiness, such as washing accommodation, food and fuel storage and, very often, means of cooking food, scullery sinks and water supply too far distant from the rooms, rooms looking on to dead walls and roofs, badly lighted, and lacking the privacy which is essential to the morals and well-being of the occupants.

Section 28, Housing, Town Planning, etc., Act, 1919, which gives the Local Authority power to carry out the repairs required when the owner fails to do so, cannot be said to be a success, Local Authorities as a rule being reluctant to put this into force. It is felt that if a penalty were imposed instead, much more work would be done.

Housing.

MINISTRY OF HEALTH TABLE.
YEARS ENDED 31ST DECEMBER, 1922 & 1923.

	1922	1923
Number of new houses erected during the year :—		
(a) Total	523	511
(b) As part of a municipal housing scheme.....	464	263
1.—UNFIT DWELLING-HOUSES.		
Inspection :—		
(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts).....	2892	2761
(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	471	318
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation.....	61	30
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation.....	1765	1986
2.—Remedy of Defects without service of Formal Notices:—		
Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	102	147
3.—Action under Statutory Powers :—		
(a) <i>Proceedings under section 28 of the Housing, Town Planning, etc., Act, 1919 :—</i>		
(1) Number of dwelling-houses in respect of which notices were served requiring repairs.....	197	303
(2) Number of dwelling-houses which were rendered fit :—		
(a) By owners	194	303
(b) By Local Authority in default of Owners.	..	..
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close.	..	..
(b) <i>Proceedings under Public Health Acts :—</i>		
(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied.....	1466	1536
(2) Number of dwelling-houses in which defects were remedied :—		
(a) By owners	1422	1507
(b) By Local Authority in default of owners.....	..	..
(c) <i>Proceedings under Sections 17 and 18 of the Housing, Town Planning, etc., Act, 1909 :—</i>		
(1) Number of representations made with a view to the making of Closing Orders.....	..	..
(2) Number of dwelling-houses in respect of which Closing Orders were made .....	..	..
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit .....	..	..
(4) Number of dwelling-houses in respect of which Demolition Orders were made.....	..	..
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders .....	..	..

Unhealthy Areas.

A comprehensive report on housing areas has long been prepared. It contains details of a number of insanitary districts, a commencement in the scheduling of which was made in the current year by a representation as to the "Percy Street Area." The decision of Council was not reached during 1923 however.

The Newcastle-upon-Tyne Improvement Act, 1882, Section 32.

No houses were dealt with under this Section during 1923.

Houses Demolished, etc.—Six tenemented houses and part of another, comprising 26 holdings, also 7 self-contained houses, have ceased to be used as dwellings, having been converted to business premises, etc.

Houses built during the Year 1923.—The City Engineer reports that there were 248 self-contained houses built privately during the year under report. In addition, 263 dwellings were provided under housing schemes.

Tenemented Houses.—The number of tenemented houses in the City is 3,498, containing 9,890 holdings, as follows :—

1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	Total.
3,286	5,430	1,060	111	3	9,890

Tenement Bylaws.

New Bylaws have recently been made and approved of by the Health Committee and are now awaiting confirmation by the Ministry of Health. Several useful provisions which were not dealt with under those existing are embodied.

Customs and Inland Revenue Act, 1890, Sec. 26 (2).

Applications from owners of 30 houses for certificates of exemption from Inhabited House Duty were received. In 15 cases the required certificates were granted.

New Buildings and Sanitary Alterations.—410 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and, where necessary, suggestions forwarded to the City Engineer for his consideration, as compared with 339 during the previous year.

COMMON LODGING HOUSES.

At the close of the year there were 46 registered common lodging houses, as compared with 47 at the end of 1922. With a few exceptions the houses were not fully occupied during the year.

No serious contravention of the Statutes or By-laws has been found, those of a minor nature being dealt with by your Inspector without having to report to the Health Committee.

Generally speaking, all the houses are well conducted and kept in a cleanly state, in fact in such a condition as to compare most favourably with many houses of a more pretentious nature. The majority of the keepers, it is believed from personal observation, are anxious to comply with the law and do their best for the inmates.

Many of the houses in the older parts of the City are in such a bad structural condition that it is a somewhat difficult matter to keep them up to the highest standard of comfort.

The following summary shows in detail the accommodation as at the end of the year :—

Description of Lodgers.	No. of			Accommodation.			
	Houses.	Single Beds	Double Beds	Married Couples	Single Women	Single Men	Total.
Married couples and single women ...	3	40	21	21	40	..	82
Single women and single men	1	43	..	..	15	28	43
Single men, single women and married couples .	3	144	19	19	61	83	182
Women only	2	35	..	..	35	..	35
Men only	37	1238	..	..	..	1238	1238
	46	1500	40	40 80 persons	151	1349	1580

The total number of lodgers for which the houses were registered was thus 1,580, as against 1,593 at the close of 1922 (a decrease of 13 in the total accommodation), due to the removal of one house and a re-arrangement of beds in some of the others. The average number of lodgers per night was 1,343, the highest and lowest numbers on any one night being 1,378 and 1,297, respectively.

REGISTERED COMMON LODGING HOUSES.

SUMMARY OF WORK DONE AND VISITS MADE DURING THE YEAR 1923.

Number of Houses on the register at the end of the year.....	46
Applications for re-registration (Newcastle Corporation Act, 1911, Sec. 63) ; all granted	47
House ceased to be occupied as a common lodging house	1
Inspections made in the day-time	6,399
Inspections made in the night-time	372
Notices served { <i>re</i> washing of bed clothes, 186 }	279
{ <i>re</i> limewashing of houses 93 }	
Contravention of Bye-laws, etc. :—	
Beds not properly “ aired ” during prescribed hours.....	1
Structural defects in houses	6
Defective water-closets	20
Defective roofs and spouting.....	20
Sinkwaste pipe obstructed	1
Choked W.C.'s and drains	17
Want of water supply to W.C.	1
Dust bins defective or insufficient	13
Unclassified minor nuisances or defects	3
Number of prosecutions	None
Deaths reported (non-infectious disease).....	1
Cases of infectious disease reported (tuberculosis 14, erysipelas 1, measles 5.....)	20

FACTORIES AND WORKSHOPS.

There are at present on the Register 1,295 workshops (an increase of 14 over the previous year), and in addition 237 “ domestic ” workshops, 279 workplaces, 29 laundries and 242 bakehouses (26 of the latter being factories).

Particulars as to the nature of the various trades, number of inspections, defects found and dealt with, outworkers, etc., are given in the following tables.

During the year 77 lists of outworkers have been received, 33 employers having sent in their lists twice and 11 employers once. Included in the lists were 36 names and addresses of outworkers employed in other towns, and these were forwarded to the Local Authorities of the respective districts, as required by the Factory and Workshop Act.

76 notices as to insanitary conditions in factories and workshops were received from H.M. Inspector of Factories ; 18 of these related to factories (which are not visited by the Inspectors of the Health Department except on receipt of complaint from H.M. Inspector), and 58 to workshops. Many of the latter, however, had been dealt with before receipt of the complaint. All of the complaints were duly investigated, dealt with, and the necessary works carried out without legal proceedings being taken.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901,
IN CONNECTION WITH FACTORIES, WORKSHOPS, WORKPLACES AND HOMEWORK,
DURING THE YEAR 1923.

Home Office Tables.

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS.

PREMISES. (1)	NUMBER OF		
	Inspection. (2)	Written Notices. (3)	Prosecutions. (4)
Factories	228	400	..
(Including Factory Laundries.)			
Workshops.....	7,746		
(Including Workshop Laundries.)			
Workplaces	890		
(Other than Outworkers' premises included in Part 3 of this Report.)			
Total.....	8,864	400	..

2.—DEFECTS FOUND.

PARTICULARS. (1)	NUMBER OF DEFECTS.			Number of Prosecutions. (5)
	Found. (2)	Remedied. (3)	Referred to H.M. Inspector. (4)	
<i>*Nuisances under the Public Health Acts:—</i>				
Want of cleanliness.....	232	232	..	..
Want of ventilation	28	27	..	..
Overcrowding	1	1	..	..
Want of drainage of floors.....	2	2	..	..
Other nuisances	70	71	..	..
†Sanitary accommodation { insufficient	28	28	..	..
{ unsuitable or defective	71	71	..	..
{ not separate for sexes... ..	25	24	..	..
<i>Offences under the Factory and Workshop Act: —</i>				
Illegal occupation of underground bakehouse (s. 101) .....	..	..	..	..
Breach of special sanitary requirements for bakehouses (ss. 97 to 100).....	89	89	..	..
Other offences .....	..	..	2	..
(Excluding offences relating to outwork which are included in Part 3 of this Report.)				
Total	546	545	2	..

* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

† Sec. 22 of the Public Health Acts Amendment Act, 1890, is in force. The standard fixed by the Sanitary accommodation Order (No. 89) of 4th February, 1903, is followed as a model.

FACTORY AND WORKSHOP ACTS—continued.
3.—HOME WORK.

NATURE OF WORK. (1)	OUTWORKERS' LISTS, SECTION 107.										OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.		OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.			
	Lists received from Employers.					Prosecutions.					Instances.	Notices served.	Prosecutions.	Instances.	Orders made (Section 110).	Prosecutions (Sections 109, 110).
	Twice in the Year.		Once in the Year.			Notices served on Occupiers as to keeping or sending Lists.		Failing to keep, or permit inspection of Lists.		Failing to send Lists.						
	Lists.† (2)	Outworkers.†		Lists. (5)	Outworkers.		(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
		Con-tractors (3)	Work-men. (4)		Con-tractors (6)	Work-men. (7)										
Wearing Apparel Making, etc. . .	66	34	158	6	23	§ 58	..	..	2	2	..	..	..	..	..
Quilt-making .....	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..
Total	66	34	158	12	23	58	..	..	2	2	..	..	..	..	..

NOTES.—† The figures in columns (2), (3), and (4) are the total number of lists (received from employers who sent them both in February and August as required by the Act) and of the entries of names of outworkers in those lists. They are, therefore, double of the number of such employers and (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name is often repeated.

Columns (3), (4), (6), and (7)—Employers seldom state whether their Outworkers are "Contractors" or "Workmen," hence the numbers given above may not be properly divided.

§ In 56 of these cases the lists of outworkers were not received in the month of February or August as required by the Act, but in every case they were subsequently received on the employers being reminded of their default. In the remaining 2 cases (of failing to keep or permit inspections of lists of outworkers) notice was also given and complied with.

* In each case the Notice was served upon the Outworker, and was duly complied with.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Workshops	1,295
Domestic Workshops	237
Workplaces	279
Laundries	29
Bakehouses	216*
Total	2,056

* Also 26 "Factory" Bakehouses.

5.—OTHER MATTERS.

CLASS. (1)	Number. (2)
Matters notified to H.M. Inspector of Factories :— Failure to affix Abstract of the Factory and Workshop Act (sec. 133)	19
Action taken in matters referred by H.M. Inspector as remedi- able under the Public Health Acts, but not under the Factory and Workshop Act (s. 5). { Notified by H.M. Inspectors..	76
{ Reports (of action taken) sent to H.M. Inspectors	76
Other :— Underground Bakehouses (s. 101) :— Certificates granted during the year .....	..
In use at the end of the year.....	7

6.—TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City.

TRADES.	Work- shops.	Domestic Work- shops.	Work- places.
Ærated Water Manufacturers, Beer bottling, etc.	7	..	9
Artificial Stone, Asphalt, Bitumen Solution, Enamel and Cement making	4	..	..
Athletic Outfitters	4	..	..
Bacon Washing.....	10	..	..
Bags, Baskets, Trunks, Brushes (making and repairing)	14	3	..
Bakehouses	216	..	..
Bouquet and Wreath making	15	..	..
Bedstead, Bedding and Mattress making ...	1	1	6
Boat and Bicycle making and repairing	32	6	..
Blacksmiths and Locksmiths	44	..	..
Carried forward	347	10	15

6.—TRADES.—*continued.*

TRADES.	Work-shops.	Domestic Work-shops.	Work-places.
<i>Brought forward</i>	347	10	15
Boots, Shoes, Slippers (making and repairing)	165	30	..
Carts, Carriages, Coaches, Barrows (making and repairing)	12	..	7
Carpet, Canvas, Water Proof Cover making ..	6	..	..
Chemical Works	2	..	..
Confectionery making	4	1	..
Coopers	6	..	..
Cork Cutters	2	..	..
Currants and other Fruit, packing and cleaning	4	..	..
Cigarette making and Pipe making and repairing	3	..	..
Dressmaking, Milliners, and Mantle Makers...	226	106	..
Drysalters	4	..	..
Engravers	5	..	..
Engineers, Electric Heating and Cooking, etc.	24	..	..
Firewood Cutting and Firelighter Makers....	4	..	1
Fish Curers	3	..	..
Furniture, Automatic Seats, French Polishing and Upholstery	55	4	..
Grain, Ice, Meat, Onions, Oil, packing and storage .....	..	..	24
Harness making and repairing	12	..	..
Hide and Skin Dealers .....	..	..	4
Instruments—Mathematical, Musical, etc. (making and repairing)	6	..	..
Jewellery, Watches, Clocks (making and repairing)	53	7	..
Joiners, Handrailleurs, Ladder Makers, and Wood Carvers and Turners.....	72	6	..
Lamp making and repairing	1	..	..
Laundries.....	29	..	..
Marble Masons and Monumental Sculptors ..	9	..	..
Marine Stores	15	..	28
Miscellaneous Warehouses and Workshops, (which include repairing umbrellas and guns, preparing cattle food and medicine, dressing leather, packing eggs, lard rendering and gut scraping)	29	3	36
Painters' Workshops, and making and bottling Paint and Varnish	22	..	..
Photographers.....	23	3	..
Pickle and Sauce making	12	1	..
Picture Framers and Gilders	11	..	..
Plasterers, Lath rending	3	..	..
Plumbers, Gas Fitters and making and repairing Sanitary Pipes and Fittings	65	3	1
Restaurant kitchens.....	..	..	118
Rubber Stamps and Tyres (making and repairing)	2	..	..
<i>Carried forward</i>	1,236	174	234

6.—TRADES—*continued.*

TRADES.	Work-shops.	Domestic Work-shops.	Work-places.
<i>Brought forward</i>	1,236	174	234
Scales, Weighing Machines and Sewing Machines (making and repairing)	8	..	..
Sign Boards, Sun and Venetian Blind (making and repairing).....	4	..	..
Stained Glass making	5	..	..
Stables (Livery, etc.) .....	..	..	34
Tailors	214	42	..
Taxidermists, Fur pulling and cleaning.....	6	..	..
Tea Blending and Packing	5	..	..
Ticket Writers	7	1	..
Timber Yards .....	..	..	11
Tin, Iron Plate and Wire Workers.....	14	1	..
Tripe Dressers	6	..	..
Typewriting Machines (repairing)	4	..	..
Underclothing (making)	31	19	..
Totals	1,540	237	279

COUNCIL AND OTHER SCHOOLS.

Sanitary Inspections.—104 inspections of these schools were made during the year, and out of that number only 5 cases of insanitary conditions were found. These were reported to the school authorities, and were all remedied. The details are given on page 200.

RAG FLOCK ACT, 1911.

Nine samples of rag flock were taken under the above Act and submitted for analysis to the Public Analyst.

Eight conformed to the standard of cleanliness laid down by the Regulations under the Act.

One contained 39 parts of chlorine per 100,000 of flock (as against 30 parts allowed).

The vendor was cautioned by order of the Health Committee.

QUARRY (FENCING) ACT, 1887.

Owing to a drowning fatality in an unfenced clay pond in the City, certain representations were made by the Coroner at the inquest to the Town Clerk, when it was decided by the Health Committee to serve notice on the owner of the land to provide a secure and sufficient fence to the pond, which was ultimately carried out.

A systematic inspection of all such places in the City was also made, and a circular letter sent to the owners of quarries, etc., within 50 yards of a public highway, drawing their attention to and giving a précis of the section, which provides that: "In this Act the term 'Quarry' includes every pit or opening made for the purpose of getting stone, slates, lime, chalk, clay, gravel, or sand, but not any natural opening."

For particulars of work done under the *Food and Drugs Acts*, see pages 183-185A.

I am, Sir,

Your obedient servant,

C. RAIMES,

*Senior Sanitary Inspector,
Inspector of Common Lodging Houses, etc.*

*Health Department,
Town Hall,*

30th June, 1924.

